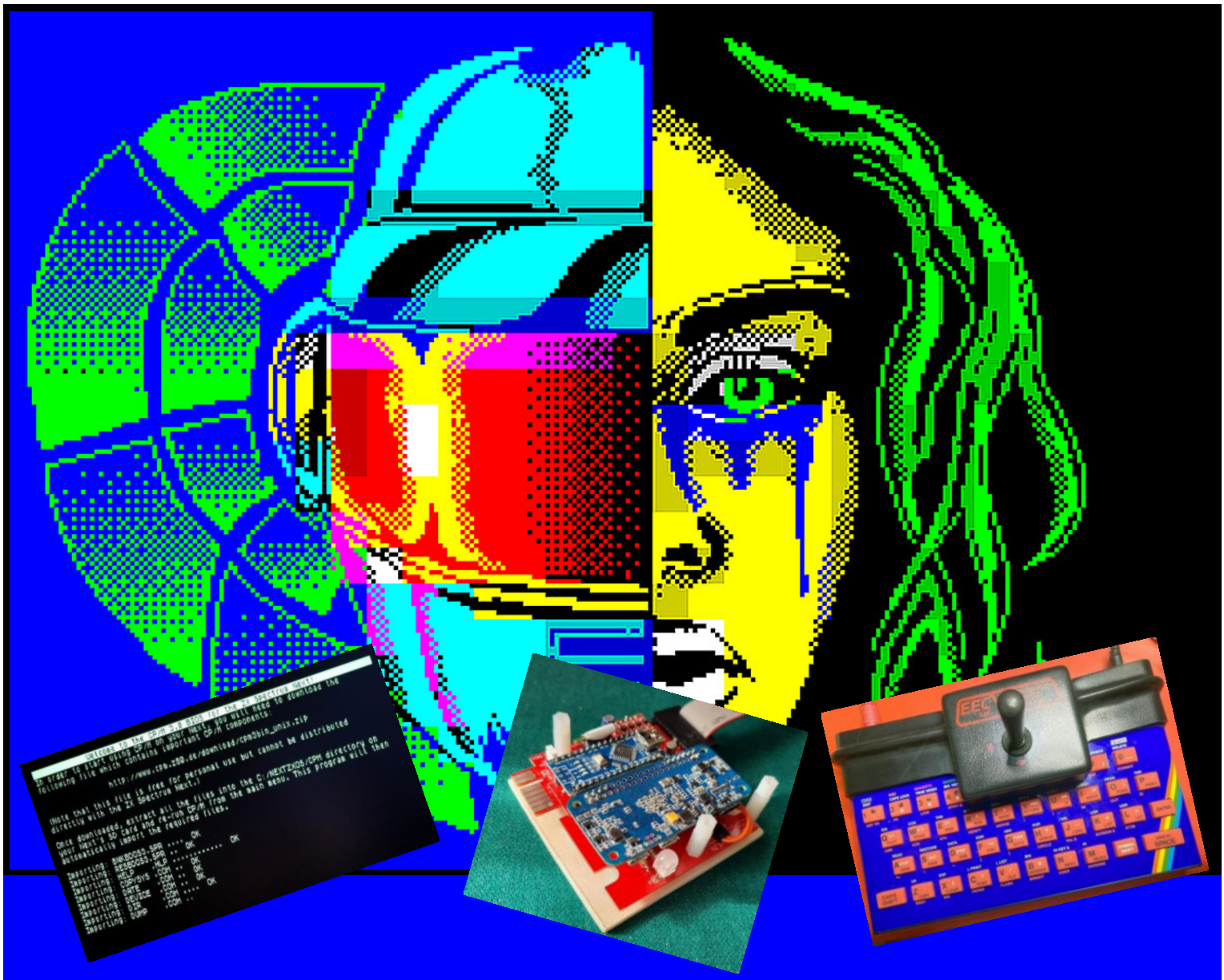
SUC-SESSION

YOUR MAGAZIN FOR THE SINCLAIR ZX SPECTRUM



- News
- Review of the SPECTRUMANIA 2022
- ZX SPECTRUM 48 rebuild, Part 3&4
- The »SPECTRUM MECHANICAL JOYSTICK«
- CP/M on the ZX SPECTRUM NEXT
- Oqtadrive – a modern alternative to the Microdrive/IF1
- Retro programming with modern resources
- And much more ...

ISSUE

233.

OF YOUR MAGAZINE

FOR SUBSCRIBERS WITH SCENE+ DISK

THE NEWEST AND BEST PROGRAMS DIRECTLY DELIVERED TO YOU

EDITORIAL

Dear SUC readers,

Four months have already passed - the last issue has only just been published!

From the point of view of the editor who designs this issue and writes articles, that may indeed be the case. The time that passes between issues is short. The procedure is as follows: first I create the German issue. In the meantime, the telephone wires between Thomas and me keep glowing, as long as the modern fibre-optic cables can glow at all. At some point I send the finished booklet to Thomas, who proofreads it and points out any mistakes. You know, one sees the own mistakes the least. Then, a few weeks later, depending on when the translations are ready, the English-language booklet arrives. In fact, for me as a writer, it's not four months at all but two at the most before I sit down at the computer again and run after the articles. It's quite stressful sometimes, especially as other things take up space in our lives. Anyway, it's still fun.

Another topic: we received a letter from a reader whose content surprised and also shocked us a little. Of course, after the initial excitement had died down, we looked for the reasons. In fact, we have come to a conclusion. You can read about it for yourselves in the letters to the editor. Perhaps you will also think about it and tell us your opinion.

In the context of this, we must once again make this time an urgent appeal for help. Thomas in particular needs help with the game reviews. He alone can't do it any more, I myself can't spare any more time to test games as well. Most of the requests for help with the games have come to nothing. Those who did cooperate dropped out after a short time or didn't participate at all. A pity really. So: come forward in large numbers! Thomas will thank you.

As Christmas is just around the corner, we wish you all a Merry Christmas and a Happy New Year. Stay healthy!

With this in mind!

Your editors

Joachim and *Thomas*

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IMPRINT

The **SUC-Session** magazine appears in German and English and can be subscribed together with the disk-magazine **SCENE+** at the **»Spectrum-User-Club«**. For further information please contact Thomas Eberle.

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Copy deadline for SUC SESSION 234

Sunday, 296th, January 2023

HOW TO SUBSCRIBE TO THE SUC SESSION

In general, the magazine is the main service of the SPECTRUM-USER-CLUB. The magazine is made by Spectrum users and for Spectrum users. Everyone can participate. By participating you can earn the magazine.

The magazine is offered in subscriptions â three issues. Usually three issues are published per year.

Subscription 1:
Three issues as a printed version
Prices:
Germany: 22.00 €
EU-wide: 26.00 €
Worldwide: 29,00 €

Subscription 2:
Three issues as PDF
Price worldwide: 4,50 €

We are planning an exclusive access to reader-only content, software and older (backup) PDF issues of the SUC Session for download. Until the website for this is up and running, this content will be sent by email on request.

The club has the following bank details,

(only use this data, not the data of the Sintech company!):

IBAN: DE93630500000719102,
BIC: SOLADES1ULM,
account holder: Mirko Seidel

PAYPAL payment is also possible:
https://www.paypal.me/Micro256

or via our website
www.speccy-scene.de

Of course you can also use other payment methods like money by registered mail, cheque or other. It would also be important to send us an e-mail or call us for the address details.

Instead of paying in Euros, you can also pay in SUC points, 1 point is worth 1 Euro. There are the following points:

1) Submit article 2 points, activated on Publication
2) Translate article German-English or English-German 1 point
3) Enquiries and small letters to the editor do not get any points for the time being, but whoever sends a letter to the editor that can be used as a real article, will of course also get one point for it.

If you are interested in helping out, please contact us. We distribute translation work and try to keep things in order so that two authors do not work on the same topic.

If you already have a subscription, we will contact you when it expires. In this case please respond immediately so that we can plan the quantities for the next issue in good time.

READERS LETTERS

Some letters to the editor have arrived after all; after twelve replies and comments on our magazine in the last issue, there are "only" seven this time. But that would be complaining at a high level, and we don't want to do that. So, as always, read the issue, give your opinion, especially on one of the letters, and let us know how you like the issue and the rest of the world. Letters to the editor as always to:

thomas.eberle@sintech-shop.de

This time we start with ***Lars Hagemann*** from Itzehoe. We welcome him as a new reader:

Hello Mirko,

I just ordered some magazines from you. Would it be OK if you sent me three back issues? I'm still at the beginning with the Spectrum topic (I had a 48k in the 80s), a bit of reading away from the forums certainly can't hurt.

Maybe you still have old stocks...?

Many greetings, Lars Hagemann

Hello Lars,

Fortunately, the tasks in the club are nicely distributed among us. That's why I'm responding to your request for older issues. In principle, we still have older issues and could even have them reprinted. The price for an issue consists of several items, a very large item is postage. If I send several issues, it costs less postage than sending them individually, so I can offer you collected issues at a much lower price than a new subscription.

Can you tell me how many issues you are interested in? Three issues are published per year, this year one issue has already been published, one is being distributed right now (as the first issue of your subscription) and one will follow in November. You can get the last three issues before your subscription or many more, just let us know how many you want.

Peter Olaszi **from Szeged / Hungary has subscribed to our magazine.**

I am very happy to be able to support the magazine and your efforts to keep Spectrum alive. Therefore I would like to donate 20 Euros for a year's subscription, which I would like to receive by email. How can I pay?

Hello Peter,

First of all, I would like to explain to everyone else that neither Joachim, Mirko nor I receive any of this money. We only cover our expenses with the club's income. Mirko has an overview of what's in the coffers, I don't even know. If at some point it comes to an end, we could think about what to do with the rest of the money, but as it is, the Speccy will outlive us all. In the end there won't be much surplus and every now and then we do a special promotion like when we gave away some free magazines at SPECTRUM35. But it's definitely the case that we're not paying on it at the moment either. Money is not the driving force for us, we gladly accept donations for the Spectrum, but not for us. So anyone who wants to support us like Peter does, in addition to the subscription, is welcome to do so. The more we get together here, the more possibilities we have, e.g. advertising campaigns but also sponsoring competitions with interesting prizes. An easy way to make a donation to us is simply to use the PAYPAL account. You can do this easily by going to the following address:

https://www.paypal.me/Micro256

We have also set up a support page through PATREON. The purpose of this page is to allow people to support projects with a monthly contribution. So far we haven't really used this yet, but if there is interest, we would be happy to set something up here. Please get in touch, but much better subscribe to our magazine, read it and give us feedback. That is the best reward for our work.

Neil Beadle from Noordwijk / Netherlands wonders about the missing disk:

Hi Thomas,

after you wrote in April that the number of subscribers with a real diskette had dropped, I subscribed for the first time. Since then I have received two printed magazines, but no diskette. Can you please check if I subscribed to the right one? Or do I need to download a diskette image somewhere? Best regards, Lionel Neil Beadle

Hi Neil or Lionel,

you've done everything right, but you probably don't realise what you've subscribed to in the first place. A subscription used to consist of three issues of the printed magazine (PDF optional) and one issue of the diskette (TAP optional). Everyone joins the subscription at a different time, for some the disk may come with the first printed issue, for others with the last. For you it would be with the last issue, but according to my records you have subscribed to "TAP", so you get a TAP file by e-mail. This is a convenient way, but if you want a real diskette, please write to us first. The disk is not ready at the time I am writing this. At the moment it doesn't look like the disk will be ready before December, but then definitely this year.

Our hard-working ***Harald Lack*** from Rosenheim / Bavaria sends us a compliment:

Hello Thomas and Joachim!

Now in the last quarter of this year, the anticipation of the Christmas season is coming back, even though the world is once again facing serious problems of an economic and political nature. How does this relate to the Spectrum? Well, for me too, the time between the editorial deadline and the publication of the magazine is the worst time. I wait anxiously for "mail" from the club. Often I'm working on an article and can hardly wait to see what's new in the Sinclair community. It was the same with the last issue. And then there it was - oho, Joachim writes that the issue is technology-

heavy. That sounds interesting. So I jumped at it and could hardly put it down. What can I say - the topics were very interesting and I take my hat off to the authors! This is expertise at its best. It can go on like this. Maybe this will lure a few users out of their shells to contribute something. As we have seen, there are enough topics and it doesn't always have to be something new. Let us participate in your ideas! A magazine like this is something to be proud of. So my modest contribution was almost a "fringe programme"! I'm already looking forward to the new issue, even if we have to be patient beforehand.

Harald

Hello Harald,

We are pleased to have met your taste. The articles are of course always the result of submissions from our readers. Therefore, thank you for the praise, but also the request to all readers to keep up the good work. As you can see, it goes down well.

From Finland, from ***Einar Saukas***, we received another mail that delighted us:

Hello,

Am I speaking with Thomas Eberle? If so, nice to meet you!

My name is Einar Saukas. I run a volunteer, non-profit initiative to preserve all historical information about ZX Spectrum and related machines as a free open-source database called ZXDB, currently used by several websites and applications. It is basically a successor to MARTIJNS WORLDOFSPECTRUM (ZXDB was created with Martijn's approval and support). Have you heard about our work?

https://github.com/zxdb/ZXDB

The reason I am *contacting you is to ask for your help in confirming and improving the information we currently know about the SPECTRUM USER CLUB, the SUC-SESSION magazine and other publications. If you can help clarify a few questions, I would be very grateful!*

This is all the information we have at the moment regarding SUC:

1) As far as we know, 231 journal numbers have been published via the paper magazine "SUC-SESSION". It seems that only 9 of these have been published freely online, which are listed with a blue PDF link on this website below:

https://spectrumcomputing.co.uk/magazine/221/SUC-Session

I believe these few publicly available journal numbers were either supplied by SUC to Martijn or distributed by SUC directly online a long time ago. Of course, I know that SUC-Session is a commercial magazine, so I fully understand if you don't want to freely distribute newer magazine numbers. But if there are other old magazine numbers that you could make available to us for free, please let me know! Maybe this would help to increase visibility and interest in SUC Session to motivate readers to buy your latest issues as well?

Note that we do not even know the publication dates of most of the other issues. Would you provide us with this information?

2) We are aware of 65 magazine issues through the digital magazine SCENE+, although we only have four of them:

https://spectrumcomputing.co.uk/list?mag_id=389

We are also aware of four programmes published in SCENE+, but we do not know the magazine number that published each:

https://spectrumcomputing.co.uk/list?label_id=13014

Do you know the journal numbers that contained these programmes? Also, if you could provide us with old SCENE+ magazine numbers for free distribution, we would greatly appreciate it (although I fully understand otherwise).

3) There is also an old set of 29 tapes that were originally stored in Martijn's WORLDOFSPECTRUM, although this set has been stored twice. You can see it here:

https://spectrumcomputing.co.uk/list?label_id=13647

https://spectrumcomputing.co.uk/list?mag_id=193

One copy was stored under "SPECTRUM USER CLUB WUPPERTAL", another under "SINCLAIR USER CLUB [German]". Do you know if this series refers to the same SUC for which you are responsible or if it was published by another SPECTRUM USER CLUB with the same name? If it was from your SUC, do you know the reason why it was also saved as "SINCLAIR USER CLUB"? I mean, was it a mistake or was SUC originally called "SINCLAIR USER CLUB" and later changed to "SPECTRUM USER CLUB"?

I apologise for the long list of questions! Finally, I would like to congratulate you on the great work of SUC to keep the Spectrum "alive" in Germany!

Greetings, Einar

Hello ***Einar,***

First of all, thank you for contacting us, even though it took us a while to reply. We have been following your work for a long time in regular reviews in our magazine or publications on disk. ZXDB, on the other hand, is something I discovered only this year, a very nice database now connected to SPECTRUM NEXT.

To your questions:

we have no problem publishing back issues and would be happy to see these datasets find a home on ZXDB. We've been trying to do this for a while and uploaded all the magazines to WORLD OF SPECTRUM FTP a few years ago, but no one ever bothered to catalogue them and so the data is still on a server that no one can get to. But I spoke to Joachim and he says he still has all the files, meaning ALL the magazines the SPECTRUM-USER-CLUB has ever produced.

(Unfortunately I have to disappoint Thomas. I only have the booklets he uploaded at some point - and of course the ones I made myself. Sorry! The early booklets are missing. [jg])

We can upload them again, but it would be best if you send us instructions on how to do it. The only condition is that our website should be able to link to it. The same applies to our disc magazine.

The SPECTRUM-USER-CLUB was formerly the SPECTRUM-USER-CLUB WUPPERTAL and was taken over by me in 1994, later passed on to Mirko. I can't say what other publications the Wuppertal club had, I only have the monthly club magazines at that time. At that time, however, there were various other projects, such as a large magazine called "COMPUTER KONTAKT", the contents of which were also created by the SPECTRUM-USER-CLUB WUPPERTAL. Furthermore, there was a SINCLAIR importer and he also worked together with the club and possibly issued publications. I can definitely say that the publications linked above are not from the time I have been involved with the club. I also don't think that SINCLAIR USER CLUB and SPECTRUM-USER-CLUB were the same, but that the SINCLAIR USER CLUB was not a club, but a commercial division of the SINCLAIR importer. The club idea was probably meant to create a community. Our disk magazine "SCENE+" was originally the publication of the "AUSTRIAN SPECTRUM CLUB" and we took this over at some point. That was probably 20 years ago. Unfortunately, we have no listing of published programmes on the disks, neither from the time of ASC nor afterwards. There would simply be too many. We are now on issue 233 of the paper magazine "SUC-SESSION", the disk magazine SCENE+ will end with issue 77. Both magazines will be published soon.

I would be happy to hear from you.

A quick note from me: the SUC Session is NOT a commercial magazine. It is produced as part of the SPECTRUM USER CLUB and, with a few exceptions, contains articles written by club members. It is produced and distributed at cost price and financed mainly by subscription income. (jg)

We are also pleased to hear from ***Simon Goodwin***, whom we hereby welcome as a reader and who will be supporting our editorial team in the future:

Hi Thomas,

here's my feedback on page 21 of issue 231 that you kindly gave me at the last show. The presentation was excellent and in general I enjoyed reading it. However.

The line to calculate free memory ignores UDGs and memory reserved by CLEAR for code or data. The following line is correct and easier to type:

PRINT 65536-USR 7962

"255 pages" should read "255 lines".

The cursor speed and timing POKEs have dots where they should have commas.

Line 20 under Timing is unreliable and returns five seconds less than it should if the two PEEKs span a frame interrupt. This risk is described in chapter 18 of the Spectrum manual under "hidden danger".

On Next %DPEEK can now be used to safely read both bytes simultaneously (after I pointed out the risk to Garry Lancaster and he implemented it with self-modifying code in DivMMC-RAM), but can still miss a carry of about 20 minutes (between the second and third bytes of FRAMES) if you wait longer.

The code to set the first line number to zero is wrong, and the last line POKEs x, whatever that may be, into the CHANS area, possibly crashing an extended machine. The first two POKEs clarify the word at the beginning of NXTLIN, which may not be the first either. If x is greater than 256, the program fails....

The rest of the article is as good as when my friend Dilwyn wrote it, although the word ROM is not actually part of the title of his book. It's a shame to see it "updated" with bad advice that seems to have been printed without being tested.

Hopefully I can find something more constructive for you in the future. I'm also bored of game reviews.

So in a nutshell,

Simon

Thank you very much Simon. I'm curious to see if more can be found here to talk about the best solutions. The dot and comma mix-ups are probably due to the inadequate PC software, we should just do the magazine again with the Spectrum (it doesn't change dots and commas easily).

This email came at the last minute, as we say it. It came as quite a surprise to us, the makers of the magazine. ***Heinz Köchler*** from Saxony-Anhalt really got into critics. The choice of words alone is questionable, the content is one-sided and subjective. Myself, Joachim, have commented on it in detail, of course as always in consultation with Thomas. Fortunately, such a letter is the exception, in fact it is the only one so far that is completely negative about the magazine and our work.

Joachim

Hello Thomas, hello Joachim,

After Thomas sent me two of the "SUC SESSION" issues to try out, I would like to take this opportunity to express my dissatisfaction with this work. To be clear: I don't like it! It is just bad! It is unprofessionally done, the font is too big and the content is boring. I therefore ask myself why I should transfer money to anyone at all? It's not worth it. Besides, I wonder where the money goes that readers pay for it! I could imagine that the makers put most of the money in their own pockets and only a small part of it goes back to end up in the magazine.

I have read issues 230 and 231 thoroughly and I am disappointed. Honestly, the "New in a nutshell" is not news. That can be read better and faster on the internet. The "Scene+" disk is a joke. It is inflexible and the content is stupid. Joachim Geupel's text "From article to issue" in issue 231 is ridiculous. Who cares how the magazine is made. Just do it and publish something sensible, dear Joachim, and don't waste the subscribers' money. Thomas Eberle writes big and wide about how a game is hacked. Also in issue 231. That is superfluous! He throws around assembler that nobody understands. And who cares about that? Joachim Geupel's description of the Sharp computers is copied from Wikipedia and only reports well-known things. Who needs that? This is not a contribution for a magazine dealing with the ZX Spectrum. Put these texts on your own homepage - nobody reads them here anyway.

I was particularly bothered by the game reviews and demos. As a long-time Spectrum user and connoisseur

of the ZX Spectrum community, I have to say that Thomas made it pretty easy for himself. There are many more games that are good and deserve to be in an issue like this. Why Thomas makes it so easy for himself, I can't say. He will probably write it off somewhere. Only his contribution to SPECTRUM40 in issue 232 was halfway worth reading. There's nothing going on with England anyway since they left the EU.

Do better at last, I'm thinking about joining the club at all if it offers so little.

Heinz Köchler

Hello Heinz,

I have to admit that your letter stunned and surprised us. You really denigrate everything we invest in the magazine in terms of time, work and money, especially as you are not even a club member. At first, we wanted to respond in the same tone and language in which you wrote your letter. But we will not stoop to this level. Instead, we will respond to you in a differentiated and polite manner. We assume that you wrote your letter under the influence of alcohol - which is known to disinhibit - but we cannot find any other reason for your choice of words.

First of all, your choice of words is inappropriate. The language you use to dismiss our work is insulting and devalues both Thomas' and my work. You kindly exclude the other authors. We reject your negative judgement with full conviction. We have asked ourselves whether you have a reason to attack Thomas and me directly. We have not found one.

I will start from the beginning.

You call our booklet a work. You are of course free to do so. Our booklet is not without its faults, of course. But it is not supposed to be. We are all amateurs and intend to remain so. You can lay claim to freedom from errors and a flawless structure on magazines like c't or chip, after all, these are also relatively expensive and the authors of the articles do this full-time. But even in these magazines there are various errors, both in terms of content and orthography. The fact is that all those who contribute to the SUC session are non-professional authors who do this for fun and interest in the retro computer we are dealing with.

That the writing is larger than that of the said magazines referred to above, you are no doubt correct in this observation. My aim as a publisher was and is to make the magazine easy to read. I have succeeded in this. There have been no complaints about this so far.

I strongly deny that the contents of the magazine are boring. I always find that the individual authors have impressive expertise that they freely share with us, the readers (which includes myself), especially as the professional background is generally very impressive. Criticising them would be extremely superfluous and unnecessary.

You are insinuating that we, Thomas and I, take the money that subscribers transfer to us and use it for our own purposes. That´s note the case, it is rather a malicious insinuation. The fact is that we ourselves invest money in the magazine in the form of work, energy expenditure and not least office supplies. Here, Thomas is the one who probably puts in the most. But we do this most voluntarily and without complaining about it. And because Thomas puts most of his own money into the magazine, there is also advertising from SinTech on the last page.

The club finances the magazine from the income of the subscriptions. The money is used only and exclusively for the production of the magazine and the shipping costs. After all, the magazine is sent all over the world, which is not cheap.

You ordered three issues from Thomas, which, as far as I know, were even sent to you free of charge as advertising for the club. It's rather surprising that you're getting so worked up about it now. Of course, you are free to join the club or not, but in a given case we will consider whether to accept you. But actually we accept everyone who is interested in us...

I have to break a baton for Thomas here very urgently. Creating the Scene+ disk is a lot of work and requires a lot of know-how. Thomas has spent a long time on the subject to arrive at a sensible and acceptable result so that it satisfies everyone. However, your demands on the Scene+ are exaggerated. To put it clearly: the Sinclair ZX Spectrum is not a computer that is on the same high level as a Windows computer, an Apple or an Android computer. To make claims about the Spectrum that are on a par with modern computers is over the top. In fact, Thomas has done the best he can with the resources he has, the time he spends on it and the technology that is available. I find his work particularly praiseworthy to be criticised as harshly as you have done.

I would only like to comment briefly on my articles on retro computers. You insinuate that I copy from Wikipedia. Of course I also use Wikipedia. But I also look up various other sources. Wikipedia does not contain everything I need for such an article. The formulations are mine, as are the spelling mistakes. I usually need several days of research and writing for such an article, and of course I don't sit at the computer and write all the time. With a few exceptions, the pictures are also mine. And, quite honestly, there used to be many computer systems, to let them fall into oblivion would be a real shame. And yes, if I like the article itself, I replace the one on my website with the one I wrote for the magazine. Why not - after all, it's my own article, as are the pictures I take for it. So I can do what I want with it. So your criticism misses the mark.

I'd like to go back to the work Thomas does, this time in relation to the game and demo reviews. A demo is relatively quick to look at. But it still takes time to evaluate it and write a short review. It is the same with games. Finding the games on the internet is one thing, distinguishing the good ones from the not so good ones is another. Of course, the selection is subjective, it can't be any other way. Thomas looks through the games, separates the "wheat from the chaff" and then plays through at least part of them. He does this with all the shortlisted games. The time required to test a single game is about an hour, somewhat less for the demos. Just to give you an idea of the time required: in issue 225 there were 17 games, in issue 224 there were 24 games and 17 demos. Work out the time yourself. It must be pointed out once

again, and this goes to all readers, that Thomas urgently needs support. He can no longer manage the huge amount of time himself. If no one can be found to help him, the game and demo chapters will shrink and become much sparser. It is very important that some club members take the time to test the games and briefly describe them.

I am pleased, Heinz, that you at least liked his contribution about the Spectrum40. But it is really presumptuous of you to judge an entire nation in a single sentence. You are going too far out on a limb here. England's exit from the EU was democratically voted and based on the laws of both the EU and England, whether you like the result or not. It is not your place to make such a pejorative judgement. Besides, the SUC Session is a non-political magazine. Political populism has no place there.

One final remark: Your letter is the absolute exception. No one has ever made such disparaging remarks about the magazine as you did. I have already experienced this in another context and have completely stopped working there because of it. The club was an SF club that died a year after I left. It no longer exists. The last issue was again by me - I buried the club due to a lack of cooperation from the members. But that will definitely not happen with the Spectrum User Club! I won't let people like you spoil my fun any more. The solution in your case is very simple for me: You will be ignored. I have noticed that there are people who deliberately look for things they don't like. These are then criticised in a one-sided and pointed way, while the things that are good are deliberately ignored. That is neither fair nor serious.

We thought about how we should proceed with you. Thomas, as usual, put the brakes on me. We have decided to simply ignore you. All the other letters we get are sometimes critical, but mostly positive in tone and expression. We are considering admitting you to the club if you actually try to do so. You have done a lot of damage with your letter - and quite honestly, we don't need something like that.

Turning to the readers of the SUC Session, I have to say that Heinz is alone in his opinion. He is not a problem for us. Everyone has a right to their own opinion, no matter how obscure or far-fetched it may be. No one need be afraid of expressing their opinion here. Only the choice of words should remain polite and the argumentation fair.

Nevertheless, we wish you, dear Heinz, a Merry Christmas and a Happy New Year 2023.

Joachim Geupel, Chief Editor of the SUC Session

Note to SUC readers from the Redax:

Dear SUC readers,

Do not be provoked by the tone and choice of words used. Thomas and I are above this and do not intend to pursue this issue any further. Heinz Köchler, if that is his name, is not a club member. He does not appear in the membership directory. For us, the issue is over, even if we were annoyed about it at first. We know that our magazine is well received by you, both thematically and in terms of execution. I hope I have not offended you. Feel free to comment on the letter and my reply if you think it is necessary. As far as we are concerned, it is over. Only the matter of support for Thomas, you should think about that. Joachim (red.)

NEWS IN SHORT

SPECTRUM NEXT NOT BEFORE END OF 2023

According to communications from SPECNEXT LIMITED, the new batch of the SPECTRUM NEXT will not be delivered until the 3rd quarter of 2023. We assume this target was given to avoid constant demands and simply to have some leeway. Due to the chip shortage, the entire board had to be redesigned and yet there are still difficulties in procuring the components. However, despite the relatively long time left, SPECNEXT LIMITED refused to produce any more units than the almost 5000 already ordered. A request for 100 more units was therefore rejected.

RELAX

HOLLY JOHNSON, once the singer of the band "FRANKIE GOES TO HOLLYWOOD", has proudly shown himself in the social media to have been the only band about which there was a computer game at that time.

Unfortunately, the Brit linked to it not a Spectrum version of the game, but the C-64 version. On his profile:

https://www.facebook.com/MrHollyJohnson

Let's see what THOMPSON TWINS and SHAKEY STEVENS have to say about it...

Z80 SECRET REVEALED AFTER 40 YEARS

The Z80 has a protected mode. Too complicated for me to understand quickly and too extensive for this column, but ANDY HU has discovered it and it is described on the following page, including a video link. What can you do with it? Let's be surprised...

https://hackaday.com/2022/10/23/protected-mode-on-a-z80-almost/

CHATTING WITH THE NEXT

More and more Internet applications are available for the Spectrum-Next, partly also for the Spectrum with Spectranet interface. Now there is also a chat programme for online meetings and exchanges:

http://www.jimbagley.co.uk/NextChatRelease.zip

NEW VERSION OF THE ZESARUX EMULATOR IS OUT.

There is a new beta version (v5.1 5.1 BETA-08092017) of the ZEsarUX (ZX Second-Emulator And Re-leased for UniX) emulator available for download:

https://sourceforge.net/projects/zesarux/files/Beta_and_Snapshot_versions/

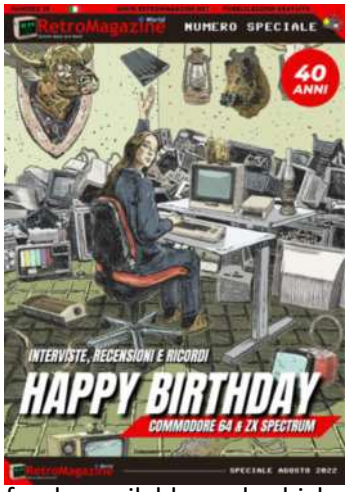
There are versions for Mac, Linux and Windows. If you are not yet satisfied with your emulator, just give it a try.

MIRON SCHMIDT PUBLISHES HIS FIRST BOOK

After a lot has already been published, mainly by American and British programmers and game developers, it might be interesting to read a German publication, even if it doesn't have much to do with the ZX Spectrum. The book entitled "10 GOTO 20" is a collection of anecdotes from 35 years in the world of computer games, reporting on excursions into the Berlin cracking scene, German software companies and developers. It has 130 pages and costs 5.99 euros online and 11.99 euros in the bookshop. You can find more information and a reading sample at:

https://www.vintrospektiv.de/index.php/2022/03/mein-erstes-buch-ist-veroffentlicht/

RETRO MAGAZINES



There are only a few magazines that deal exclusively with the ZX Spectrum apart from the SUC-SESSION. CRASH is one of them, of course, and *"THE SPECTRUM SHOW"* is also published as a PDF on a fairly regular basis. In addition, there are many magazines that deal with retro and one of them is the Italian "RETRO MAGAZINE", which is freely available and which, with its current issue 16, mainly deals with the two birthday celebrities C-64 and ZX SPECTRUM. Don't worry, even though it comes from Italy, the whole thing is in English.

The magazine has 58 pages and, unlike the SUC SESSION, is meant to be read on screen rather than printed out. Although the magazine seems to be aimed at ZX SPECTRUM and C-64 users, it only begins to describe these systems. Of course, especially this year we have heard the story of our SPECTRUM umpteen times, but it is also interesting to learn something about the other well-known 8-bit computer - C-64 users may feel the other way round. The history of both computers continues into their modern successors, the MEGA65 and the SPECTRUM NEXT. After many more excursions into the past, it gets a bit modern again in between with some game reviews, but after that comes a long section about the legendary "MANIC MINER" (I can hardly hear it anymore) and (get this) its C-64 copy "SICULITAN MINER".

Of course, it's interesting to take a look at what's happening on other systems, but at the same time not to lose sight of the SPECTRUM. "RETRO MAGAZIN" manages this balancing act with this issue, even if to my taste it deals too much with the past and too little with current hardware and software, which are available in abundance for both systems. But the magazine is professionally produced, entertaining and it's free of charge.

That's why everyone can take a look:

https://www.retromagazine.net/download/RetroMagazine_16_eng.pdf

The *"CLUB ZUM ERHALT KLASSISCHER COMPUTER e.V."*, or *"VzEkC e.V."* for short, has published its magazine for this year. This time the focus is on "WORKSTATIONS", which can also be seen very clearly on the cover. Cover topics include "HISTORY OF WORKSTATIONS", "MANUFACTURERS AND MODELS", "UNIX ON THE AMIGA" and "ATARI TRANSPUTER". In the section "HARDWARE" there is, among other things, an article about the "SINCLAIR QNET" of the SINCLAIR QL. Here not only the QL is presented, but the author MARTYN HILL goes into detail about the structure of the QNET protocol and the QNET network.

Furthermore, in the software section a CROSS DEVELOPMENT ENVIRONMENT, a Cross ASSEMBLER for the ATARI ST, and the introduction to DBASE are presented.

Of course, projects are not missing either. For example, a temperature sensor for the APPLE][and the emulation of a COMMODORE 1541 floppy drive.

The booklet has 84 pages including cover and spine and can be ordered as a paper magazine from the association. Members receive it free of charge, all others pay a nominal fee of 3 € including postage. Furthermore, the magazine can be downloaded as a PDF file at

https://www.classic-computing.org/load8/

The download is also free of charge.

BOOKS

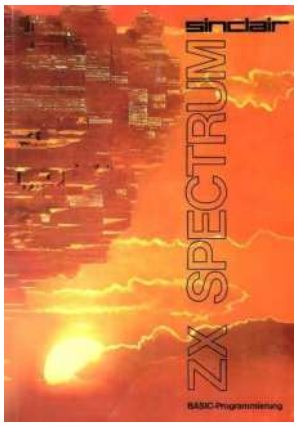
VON JOACHIM GEUPEL

In the second part of this article, I will introduce you to some of the books that are on my shelf. Most of the books are almost 40 years old. Accordingly, they are only available antiquarian and/or on Ebay.

The article in the last issue presented a few of the books that focus on hardware and machine-oriented programming. This issue is more of a hodgepodge on all sorts of topics. So let's start with...

»SINCLAIR SPECTRUM BASIC PROGRAMMING«
BY STEPHEN VICKERS

Sinclair Research Ltd, Cambridge, 1982
German translation by Verlag Cooperation München, ISBN 3-88945-011-3



Everyone probably knows this book. It was delivered together with the SPECTRUM 48 and is a translation of the original by Stephen Vickers, the programmer of the Spectrum ROM. It was translated by T. Westermayr.

In the book, all commands are explained and illustrated with many examples. Admittedly, I took my first steps in programming with this book.

»ZX SPECTRUM +3«
BY IVOR SPITAL, CLIFF LAWSON AND RUPERT GOODWINS

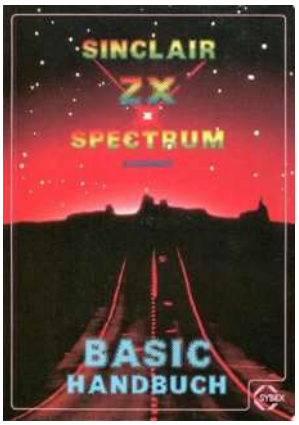
Amstrad Plc, © 1987

This book is also known to many. It was also included with the ZX SPECTRUM, this time with the SPECTRUM +3. Equivalent to the previous book, it explains everything that is necessary to handle the ZX SPECTRUM +3. Thomas gave me this book when I bought my first ZX SPECTRUM +3 from him.

»SINCLAIR ZX SPECTRUM BASIC MANUAL«
BY D.HERGERT

Sybex Verlag, 1st edition 1983, ISBN 3-88745-027-2

This book is an alphabetical reference book of Basic commands. The first two pages are general introduction explaining the structure of the book and some technical terms. It also briefly touches the structure of the keyboard.



I have worked with this book a lot. The alphabetical layout makes it very easy to find a specific command. The individual commands are well explained and illustrated with examples. The last pages of the book form the index, which is missing in the printed edition of the NEXT manual of the NEXT, for example.

I like this book very much. It has, in contrast to cheaper produced books, survived the long time from 1983 until now without falling apart. The very well-structured index is very useful, you can quickly find what you are looking for with it. The explanations of technical terms are interspersed alphabetically throughout the book and are also listed in the index. What I don't like about the book is that the page numbers are not arranged on the outside or in the middle of the page footer but at the top of the inner margin. This arrangement makes it difficult to handle. One is forced to open the book completely each time to be able to read a page number.

All in all, this manual is to be recommended. So if you see it somewhere and don't have it yet and your favourite toy is still the ZX SPECTRUM 48, buy it. It's worth it.

»AROUND THE SPECTRUM«
BY EKKEHARD FLÖGEL

Hofacker Publishing House, ISBN 3-88963-108-8, 1st edition 1983

"RUND UM DEN SPECTRUM" is probably one of the first books published apart from SINCLAIR LTD. From what I deduce this? The cover shows a TIMEX and in the preface it is pointed out that no other computer was available and furthermore all programs were written and tested on a 16 kB Spectrum. This is the guarantee that all programmes will also run on a SPECTRUM without Upper RAM.

In contrast to other books, this book does not explain the structure of the SPECTRUM first. On the first four pages it is made clear what programming actually is. For example, it says "The computer is only as intelligent as its programmer" - wise words! Every one of us has been annoyed at one time or another that the programmer did not think of possible error possibilities. I remember a short anecdote from my computer past. One of the most glaring examples of "errors between the ears" was a programme for

formatting a hard disk of the ATARI ST. At the final query it only said "Start formatting: [OK]". Fortunately, the only thing that helps here is the easily accessible reset button. It seems to me that Mr Flögel has had similar experiences...

After the introduction, the author gets right down to business. From page 21 to page 42, in chapter 2, the author describes how to programme a game. He starts with changing the character set, moves figures, explains the free fall and the oblique throw and ends this section with two listings, "ARTILLERY" and "SNAKE".

In the 3rd chapter he deals with graphics. Here are just a few of the topics covered from page 43 to page 82: plane functions, spatial functions, Fourier analysis, statistics, bar and pie charts, polar plots, spirals, cardioids, cycloids, hidden lines, etc.

Chapter 4, which he broadly names "Other Programs", is more broadly about Spectrum-specific programming tricks. Here you will find, among other things, listings for capital letters, scrolling text, Roman numerals, solving an equation with three unknowns, day of the week and much more.

In the 5th and last chapter, the author discusses input and output. Of course, the obligatory description of programming in machine code is not missing here. In addition, there is a monitor programme called "MONI". With this programme, memory addresses can be viewed and changed. MONI is a bit difficult to handle, but should make the work a bit easier. I have not tested it...

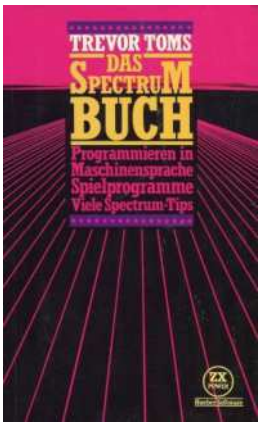
An input and output expansion via an 8212 component follows, also a sound expansion with the AY-3-8912, which is well known. A circuit diagram is included for both projects.

This book is an early treat. The author has really put some effort into it. He covers pretty much most topics relevant to the Spectrum, with the exception of a decent mass storage device perhaps. I was browsing the book with interest when it came to me. Unfortunately it is printed on cheap paper and cheaply bound in paperback. It is falling apart because the glue has become brittle. The pages have yellowed and will soon "give up their structural integrity", as Data would say. But it was fun to deal with the book.

»THE SPECTRUM BOOK«
BY TREVOR TOMS

Hueber Software, ZX Power Edition,
1st edition 1984, ISBN 3-19-008207-3
English original title »The Spectrum Pocket Book«,
translated by T. Westermayr

Similar to the previous book, this book deals with programming techniques and machine language, but the approach is different. The author illustrates many programs, which he explains. Before the listings there is a short description, and next to the listings there are explanations of what the corresponding part of the program does. One can be quite divided about this approach, but the aim is probably "learning by doing". The listings are usually quite long and confusing. Writing them down is the same ordeal we struggled with 40 years ago. There are mostly game listings and a few user listings. Honestly, I don't want to do the typing to myself any more.



The second part deals with the machine code. Here are a few tips on the Spectrum ROM and how to use it, plus three programs, "ZXASM", a symbolic assembler, "ZXDISASM" a symbolic disassembler, and "ZXMCMON", a machine code monitor. I have not tested them either.

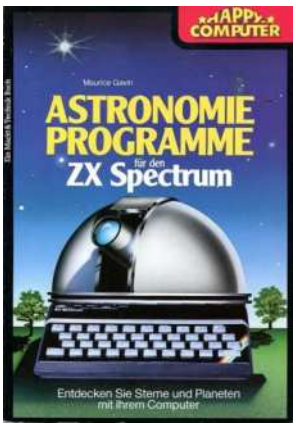
In the appendix there are a few more entry points into the ROM. This section is called "Screen Tools".

You either need this book or you don't. The appendix with the ROM entry addresses is interesting.

The workmanship is similar to that of the "SINCLAIR ZX SPECTRUM BASIC HANDBOOK". It has survived the time since 1984 until now well. The paper is still in good condition, even though it has the odd bit of yellowing. It's back on my shelf now, I'll probably do the reading again during the Christmas holidays - or not.

»ASTRONOMY PROGRAMS FOR THE ZX SPECTRUM«
BY MAURICE GAVIN

Markt&Technik Verlag, 5th edition 1988,
1st edition from 1984, ISBN 3-89090-048-8,
original English title
"ZX Spectrum discover the heavens on your computer"
translated by Stephan Kaske and Karim de Souza



This book is admittedly my favourite ZX SPECTRUM book. I have read it thoroughly and learned a lot from it. A friend lent it from me in the late 80s and at some point I demanded it back because I had a hard time parting with it. The edition I have now arrived with a defective SPECTRUM. The SPECTRUM works again, but the book was very worn due to frequent use and is now partly falling apart.

In the book, the author gives an all-round tour of astronomical calculations. Right at the beginning, the author explains the nature of time. This consideration is general and rather philosophical in nature. Considering that the nature of time fills entire books and is extremely difficult, Maurice Gavin has done a very good job.

In Chapter 1, he touches on "Time and the Calendar", explains the Earth's clock, goes into the "Gregorian Calendar", moves on to the SPECTRUM'S calendar and presents several programmes for typing in. These programmes are mostly pleasantly short and actually fulfil every wish. So if you want to know the day of the week on which he or she was born - here is a suitable programme.

Chapter 2 is more complicated. Here it is about "spheres within spheres", whereby we do not mean those in which some people float after drinking too much spiritual beverages. Maurice Gavin explains the necessary coordinate system for astronomical observation in two and three dimensions, presents a programme with which these can even be viewed in three dimensions with the help of red-green glasses. A programme that shows the position of a star at a certain time of day is also available, as is one that shows the course of stars and planets over a certain period of time. While the programmes are relatively accurate, the display cannot logically compete with the more modern programmes.

Chapter 3 deals extensively with the phases of the moon and the shadow cast by our satellite on the earth.

Chapters 4 and 5 are chapters on satellites in the broader sense and the orbits of the planets around the sun. Here, not only the artificial Earth satellites are meant but also comets and the orbit of the dwarf planet Pluto before it was degraded.

In both chapters, the respective historical context is also discussed, which is not necessary, but makes the book even more entertaining.

Chapter 6 finally gets very deep into the topics. This is where it gets complicated. The course of the planets is explained, accompanied by quite extensive programme listings in which the coordinates of the planets are calculated at a given time. The moons of Mars are discussed and calculated, one programme shows the position of the moons of Jupiter, another the inclination of Saturn's ring on its orbit around the sun. Maurice Gavin really makes an effort to explain the connections and offers the corresponding programmes for this.

In chapter 7, things get physical. It talks about "triple star systems", the "Lagrangian orbits", "double star systems" and their orbits, up to the presentation and explanation of galaxy spirals. Here you will find short programmes that conjure up spiral representations on the screen. The chapter concludes with a programme that draws a hypothetical representation of our Milky Way from intergalactic space.

Chapter 8 explains the use of star charts. A ZX Spectrum program projects constellations onto the screen, whereby a miserably long list of data must first be entered into the computer. A treat is the shifting of the constellations due to the proper motion of the stars over a longer period of time. Here, however, the Spectrum reaches its limits due to its computing speed.

Finally, chapter 9 is dedicated to practical applications. A Messier list with 104 "non-stellar objects", i.e. star nebulae, makes the start, followed by the use of a telescope, a quiz "star tester" is also included as well as a world map made of user-defined graphic characters.

The final chapter is Chapter 10, which provides help in using the ZX SPECTRUM, entering programs, troubleshooting, printing and storing listings.

The 259 pages contain a wealth of knowledge about astronomy. Maurice Gavin really knows his stuff. It is fun to follow him through the book as he explains. All in all, the programmes are mature, but can be improved. I had and still have a lot of pleasure with the book. The reason is certainly that I am interested in astronomy and cosmology.

If you feel the same way, buy the book if you see it somewhere. It is, however, a real rarity and is traded accordingly.

So, that's it for this time. In the next issue I will present the last five books in my SPECTRUM library.

SINCLAIR AT THE »VINTAGE COMPUTING FESTIVAL BERLIN VCFB 2022«

BY INGO TRUPPELT AND NORBERT

For eight years now, Norbert Opitz and Ingo Truppel have represented the SINCLAIR community every year (except for 2020, when the festival was held virtually) especially the SPECTRUM USER CLUB at the "VINTAGE COMPUTING FESTIVAL BERLIN".

Picture 1: SUC- booth at the VCFB 2022

In 2019, we even took second place in the visitor favourability rating (audience award). The festival took place from 2014 to 2016 in the rooms of the HUMBOLDT UNIVERSITY BERLIN (HUB), from 2017 to 2019 in the TECHNIKMUSEUM BERLIN, in 2020 virtually

Picture 2: from mechanical to electronic, everything is present

on the net and from 2021 again in the HUB, as unfortunately the space in the Technikmuseum is occupied in the long term.

The event revolves around old computers, from the first mechanical calculating machines to almost still actual models as well as their replicas and/or functional models. Analog computers were also often represented.

Besides ourselves, there is a very active APPLE corner, as well as COMMODORE. GDR computers were also represented in the past, as were various small computers, pocket calculators and parts of mainframes, as well as didactic setups and construction kits. Technologies such as magnetic core memory, early hard disks, punched cards and -tapes, all kinds of floppy disks and other types of storage media can be viewed in detail and in some cases can be seen in action.

The name deliberately contains the participle "COMPUTING" and thus means that the exhibited devices may be demonstrated in working order as far as possible and, if possible, may be operated by visitors. This makes a visit to this festival, which is incidentally free of charge, a very special experience. The fact that setup takes place as early as Friday afternoon and that there are two full days, Saturday 10 am - 7 pm and Sunday 10 am - 5 pm, leaves enough time for in-depth discussions and intensive study of the subject matter.

Picture 3: The competitor (C64) to the ZX-Spectrum is also a regular participant.

Our stand was regularly well visited by guests from various nations and there was regular congestion and joy that this old technology, some of which was well known to some, was still being maintained and demonstrated in working order.

To secure the future of this festival, an association was founded, which is always looking for members:

https://vcfb.de/verein/index.html.

Information on current and future events can be found on the website

https://vcfb.de

Accompanying lectures are recorded and can be viewed at the following link, as well as the opening and closing events:

https://media.ccc.de/b/conferences/vcfb/

We look forward to this wonderful event every year.

Ingo Truppel and Norbert Opitz

»SPECTRUMANIA« 2022 IN WITTENBERG

BY THOMAS EBERLE

Only a few SPECTRUM meetings can look back on such a long history. Already for the 24th time the SPECTRUM users met in Wittenberg and I was there again. As usual, those who arrived early met on Friday evening in a restaurant in the city centre, where the keys were distributed for those who had booked an overnight stay. Of course, you could also book a room yourself in a nearby guesthouse, but the service Norbert offers here to reserve rooms is really great. The next morning we started, already at breakfast the guesthouse was firmly in SPECTRUM hands, and when we arrived at the adult education centre we met the other visitors. Of course, we were first welcomed and set up, and then we chatted a lot. Especially about the SPECTRUM NEXT I learned a few things again, while my friend, funnily enough, placed a ZX81 listing that I wanted to dispose of conspicuously and asked questions about it. An interested circle quickly formed and the listing went from table to table for the next two days and was analysed by everyone. For those who don't know, the ZX81 doesn't know the "MERGE" command, the listing was the replacement for this command.

There were also some presentations, I reported about my trip to the "SPECTRUM 40" and Dieter made a presentation about a real treasure hunt hidden in a SPECTRUM game. The rest of the two days Luzie and I occupied the beamer and tested various football games on the NEXT. There were a few "Ahs" and "Ohs", what a great game that would be, but in fact it was only "MATCH DAY", but with 14MHz, i.e. a good four times the speed.

You could also get new hardware, most of what was for sale I had brought myself, but there was also a box of parts just to take away, where you could discover interesting things.

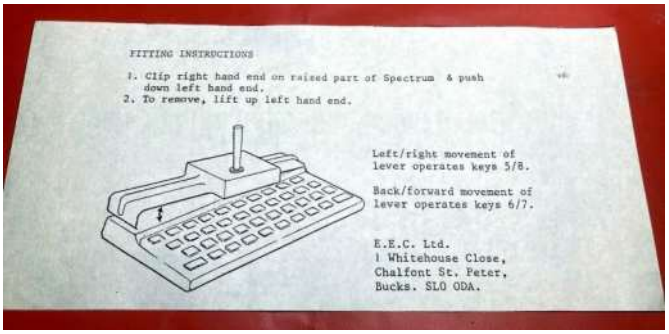
There is no better place to exchange ideas than

a SPECTRUM-USER-TREFFEN and so I took a lot of inspiration home with me, among other things the connection to the SPECTRUM-DB database now allows me to load almost any SPECTRUM game from the internet directly into the SPECTRUM NEXT. By chance, you can only discover something like that in Wittenberg. See you next time.

THE »SPECTRUM MECHANICAL JOYSTICK«
OR
»HOW MEMORIES CAN BE DECEIVING«

BY STEFAN "SCHOMBI" SCHOMBURG

Around the year 1984/1985, when my brother and I operated a 16K SPECTRUM together on a B/W TV, he sensible, with programming and serious software like TASWORD - I with games like JETPAC and PSSST, money was tight. My brother, who is 5.5 years older than me, had saved up and ordered the DIY RAM upgrade to a gigantic 48K. This gave me hope for even more, even better games, but still with keyboard control. I enviously looked at my buddies (often doctors' or civil servants' sons), who of course got a C64 with floppy and monitor right away). On their computers there were two joystick ports by default, on the SPECTRUM none. My money wasn't even enough for a KEMPSTON joystick interface, especially since ordering from the UK, in those grey times, would have been a real risk - I just say send a check and so on. Maybe there were also cheap suppliers of such interfaces in Germany, but I only had a handful of addresses from a magazine and a half. At that time, one could only dream of something like idealo.de or geizhals.de. However, one of these magazines advertised the "SPECTRUM MECHANICAL JOYSTICK", which was supposed to make the purchase of a joystick interface unnecessary. A joystick, which was simply clipped on the keyboard, that was God's hardware contribution and I dreamed from now on of this part.


FITTING INSTRUCTIONS

1. Clip right hand end on raised part of Spectrum & push down left hand end.
2. To remove, lift up left hand end.

Left/right movement of lever operates keys 5/8.

Back/forward movement of lever operates keys 6/7.

E.E.C. Ltd.
1 Whitehouse Close,
Chalfont St. Peter,
Bucks. SL0 0DA.

Now here should come the happy end, but it doesn't. Fact is, I dreamed unsuccessfully and at least 12 months later a KEMPSTON JOYSTICK interface with 5mm steel case came from somewhere, with which I could play most of the games with joystick. The MECHANICAL JOYSTICK was no longer present in my mind and the memory faded.

About 37 years older and richer by a nice Sin-clairs collection, I stumble by chance on just that MECHANICAL JOYSTICK as new old stock (NOS), and that from a German supplier. Immediately the old memory flares up again. I must have this part! Price suggestion submitted, bid accepted - great! A few days later the box is with me. Hmm - somehow I had imagined it differently. The thing is very (actually 98%) plastic-heavy, light and really confidence-inspiring it is not. So, I took out one of my rubber specs, read the "instructions" (which is only a 10x20cm piece of paper printed on both sides) and then tried with gentle force to clip the joystick onto the housing. This is not really defined. After that, four plastic buttons are supposed to transfer the movements of the joystick/plastic stick to the keys 5, 6, 7, 8, i.e. to the cursor keys. Oha - as a child I had not thought that far. So if a game doesn't use these keys or doesn't offer a redefine, then it's all over with the MECHANICAL JOYSTICK anyway. Besides, after almost four decades, I now realize that there is no fire button at all. Great joystick replacement! Well, I'm an optimist - and a brave one at that! So I did the hardcore test with a plugged SMARTCARD from RETROLEUM and the matching game on SD card (on the back of the manual are some ancient, compatible games listed). Load the game, check the key assignment again and off you go!

Arggh, there's nothing happening at all! But wait - the Sprite was shaking, wasn't it? After five minutes of unsuccessful tearing at the plastic knob, I tell myself that back to basics is probably the more sensible choice. So I unplugged the SMARTCARD and tried the stick in SINCLAIR BASIC. Yes, when I press the stick to

the left, a 5 appears. This is reproducible, but neither pleasant to use nor particularly healthy for the keyboard membrane, I think to myself. After another quarter of an hour of positioning attempts, which don't change the result much, I remove the MECHANICAL JOYSTICK from the Spectrum again. Am I disappointed? No. Rather surprised by my childish naivety. How could I think that something like this could be a good and cheap alternative to a real joystick with interface? I imagine myself typing a listing and having to use the joystick for the numbers 5-8. Not a very tempting idea. Now I put the joystick back in the box and add it to my collection. I don't think I will use it again. (sb)

CP/M ON THE SPECTRUM NEXT

BY JOACHIM GEUPEL

Honestly: what do you need CP/M for in the time of WINDOWS 11, LINUX DEEPIN 20 and MAC OS13? The question is allowed here, because CP/M has fallen out of time to keep up with today's requirements. Some may now say "Yes, but CP/M is a powerful disk operating system that can do things MS-DOS can't and... ".

The real value of CP/M is, let's be honest, rather nostalgic. There is no program that has existed under CP/M that does not exist equally and in much better execution under the systems listed above. But what is really appealing about it is exactly the said nostalgic value. For many of us CP/M was the first disk operating system we ever came into contact with. Our old friends UNIX, MOS, ISIS and whatever they are all called were and are basic systems that ran on medium and large computer systems, and some of them are still running. But these are systems which were not or are not suitable for microcomputers. So CP/M was the OS on which the long series of disk based operating systems is based.

If you ask WIKIPEDIA, CP/M is the first platform independent operating system for microcomputers.

CP/M stands for CONTROL PROGRAM FOR MICROCOMPUTERS and was developed around 1974

by DIGITAL RESEARCH - although there is a difference of opinion here - others put the date two years earlier. In fact, GARY KILDALL, the father of CP/M, earned his PhD in computer science in 1972 and offered his first CP/M to Intel for sale in 1976. KILDALL founded his company "INTERGALACTIC DIGITAL RESEARCH INC." from the proceeds, which was later shortened to the more familiar name "DIGITAL RESEARCH INC.".

In the version CP/M 2.2 the system ran in 600000 copies on 300 different computers. KILDALL further developed CP/M for the 16-bit processors, for example as CP/M 86 for INTEL processors and CP/M 68K for MOTOROLA-68000 processors. CP/M 68K was by the way the basis for the TOS operating system of the ATARI ST.

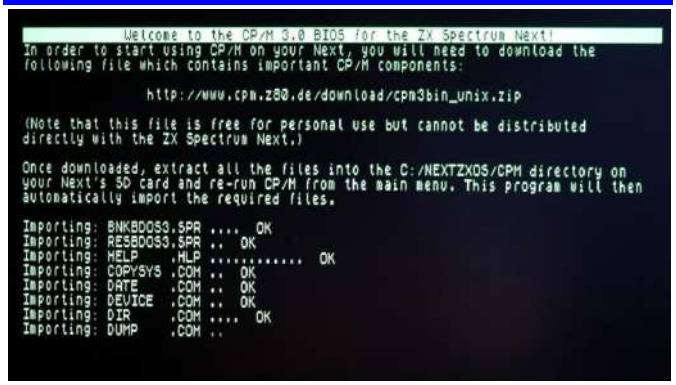
Why CP/M did not prevail against MS-DOS, nobody knows exactly. One reason may have been that GARY KILDALL was more interested in programming than in marketing his product, but another reason is surely that MICROSOFT quickly adapted and further developed its MS-DOS and the software based on it, such as WINDOWS, to the increased requirements of new processor systems and newer computers, and of course marketed them with an infinitely greater advertising effort. As a result, CP/M and the resulting DR-DOS fell far behind.

GARY KILDALL died in 1994 of a heart attack. He did not live to see the settlement, which CALDERA, which bought DR-DOS 1998, closed with MICROSOFT and brought in 200 million dollar. GERY KILDALL could have only dreamed of this sum during his lifetime.

The source code of CP/M and other DIGITAL RESEARCH products is publicly accessible today at

http://www.z80.de.

INSTALLATION



Installing CP/M on the NEXT is very simple. In order to install the system, it must first be downloaded. The download can be found on the website "THE UNINOFFICALS CP/M WEBSITE" under the link

http://www.cpm.z80.de/download/cpm3bin_unix.zip

In this zip file you will find the complete "CP/M Plus" package. This file is unzipped and copied to the appropriate directory on the SD card of the Next.

On the SD card of the NEXT you will find the folder "NEXTZXOS", and in this folder you will find the folder "CPM". The complete content of the ZIP file is copied into the folder. To complete the installation, the CP/M on the NEXT only needs to be started. There are several ways to do this.

The easiest one is to first select the entry "M" in the NEXT start menu to switch to the second page. There again the entry "CP/M" can be selected.

GARRY LANCASTER was kind enough to write a complete installation routine that does everything by itself. The installation takes a few seconds; you can watch it live on the screen. Once this is done, pressing the space bar returns you to the main menu of NEXT. Calling CP/M again will start the great-grandfather operating system. To return to the NEXT, the command "EXIT.COM" is available. Entering "EXIT" terminates CP/M and the computer returns to the NEXT system.

Of course, if CP/M is running, it is not enough to just enjoy the input prompt. You also want to do something with it. Entering the command "DIR" displays the contents of the directory. Here you will find a whole series of commands, which I will not go into here. But I would like to explain three of the commands briefly.

"DIR"

What else should it be than displaying the directory. Here you can also use a "*" as wildcard. With "DIR *.BAS" all files, if available, are printed, whose name ends with ".BAS". "DIR C*.*" prints all names beginning with "C".

"HELP"

With "Help" the program of the same name is started. The most important commands are listed and by entering the corresponding command a short explanation is output. By entering the command "HELP" and the corresponding command, e.g. "HELP DATE", the explanation is also displayed.

"IMPORT"

With the command "IMPORT" further programs may be added to the CP/M. It is not sufficient to copy the corresponding program into the CP/M folder. It does not appear in the directory because of that. To make CP/M familiar with a program, the command "IMPORT" is used. If "IMPORT" is entered without further additions, the computer shows an explanation how to use the command. I have downloaded several CP/M programs from the Internet and imported them successfully; among others the CP/M version of BASIC-80 from MICROSOFT. I did not make it too difficult for myself. According to the explanation I copied the file "MBASIC.COM" into the "TMP" folder of NEXT. With this the path was given. With "IMPORT C:/TMP/MBASIC.COM A:" the Basic was integrated and runs.

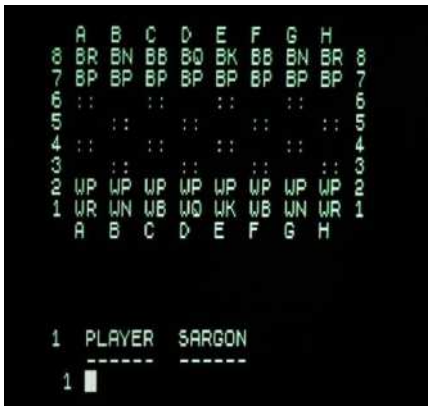
So:

"IMPORT {ORIGIN-DRIVE/ORIGIN-PATH-NAME/PROGRAM-NAME} (SPACE) {SOURCE-DRIVE}", E.G. "IMPORT C:/TMP/MBASIC.COM A:".

Voila! The program is integrated and running.

Again, the wildcards "*" work. With "**IMPORT C:/TMP/*.BAS**" all files ending with "**BAS**" are integrated.

But be careful! CP/M does not provide for subdirectories, i.e. folders - at least I don't know anything about it. So in the directory of "**A:**" a



confusing mess arises relatively fast. However, I'm willing to be proven wrong about the subfolders - after all, it was possible with CP/M68k.

Another program I imported is "SARGON", a chess program from the late 70s and early 80s. It was a benchmark for playing strength and comfort at that time (WIKIPEDIA). I haven't tested it extensively, but if you can handle the fact that the chess board consists of ASCII characters, you can play with it.

CONCLUSION:

CP/M on the Next runs well and installs without problems. GARRY LANCASTER did an excellent job preparing the NEXT for it. And the nostalgic feeling is original, because you have to do without any comfort.

So have fun with CP/M! Who knows, for what you can still use it.

(jg)

THE OQTADRIVE - A MODERN ALTERNATIVE TO THE MICRODRIVE/IF1

BY HEINZ JUNEK, 20 OCTOBER 2022

The Oqtadrive - a modern alternative to the unreliable Microdrive with all its advantages and more

Who doesn't know the MICRODRIVE and IF1 for the ZX SPECTRUM? The first fast mass storage device for the ZX Spectrum, which later became standard equipment on the QL. Technically simple, typical for Sinclair, but unfortunately also quite unreliable.

Figure 1: The vDrive with SD Card

The small magnetic tapes in the cartridges were referred to as "racing shoelaces". And the idea of the winding mechanism that stretches the tape over and over again is already innovative. Actually, one would have to say that it was surprising to be able to store over 100kByte of data on a cartridge at transfer rates of 90kbaud with such a simple device. After forty years, however, hardly any cartridge can still be used; rather, the foam rubber that presses the lace to the read head has long since liquefied, and attempts to read the cartridge end in total failure. Of course, one wonders why such a storage medium can still be of interest today. After all, there are now convenient floppy disk solutions (BETADISK, GAMMADISK) or mass storage devices based on memory cards (DIVIDE, MMC). WLAN-supported solutions could also be considered - the WESPI project for the ZX81 has shown a fundamental way forward. But: like no other mass storage device (with the exception of tape, of course), the microdrive is supported by most of the application programs of the time. The HISOFT products PASCAL, GENS, MONS or the BENSCHOP FORTH83 should be mentioned here. The programming language LOGO, which only really became usable with the microdrive, also deserves special mention. Saving and loading for these

Figure 2: Housing from the 3D printer

programming languages with the BETADISK or the DIVIDE is only possible with tricks (point commands or POKEing addresses). For LOGO it is, as far as I know, completely impossible. These special advantages of the MICRODRIVES were one of the main reasons for me to buy the IF1bis 10 years ago. But in the end, my friendship with this interface ended in disappointment because of frequent crashes of the device. I was then delighted to hear about the VDRIVE, developed by New Zealander CHARLES INGLEY, which behaves like the MICRODRIVE on the IF1. Unfortunately, due to price increasing, shipping costs and customs duties, this device is now no longer available for less than 150€. A high price, even if it gives you eight virtual "drives" at the same time.

Now, the "OQTADRIVE" developed by Alexander Vollschwitz("XELALEX" in forum.tlienhardt.com) has recently appeared, which is an equivalent to the Microdrive for the user, as all Microdrive commands are supported. Furthermore, it is possible to communicate with this IF via

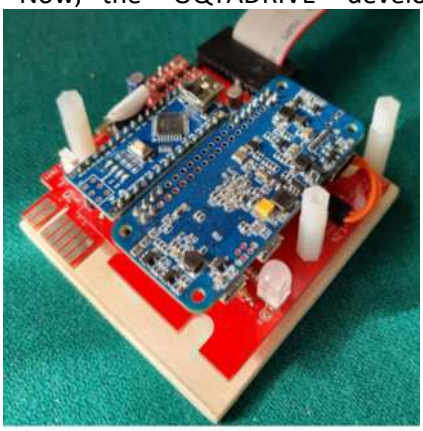


Figure 3: Qptadrive with *Ardurio nano* and *Banana Pi M2 zero*

WLAN and in this way load programmes into the ZX SPECTRUM as an alternative. I had asked XELALEX to explain the origin of the name: eight drives in one interface with a (virtual) endless tape. This suggests the name OCTADRIVE. And if the c becomes a q, the pronunciation remains, the spelling looks cool and if you add an extra bow to the "q", you get an infinity sign. So OQTADRIVE. The complete technical details can be found at

https://xelalexv.codeberg.page/oqtadocs/.

A few words about how it works and how it is built. I want to start with the pleasant news that the OQTADRIVE can be assembled by anyone who can solder a bit. Moreover, the technical documentation including the software is freely available. The OQTADRIVE contains two microprocessors. One is the ARDUINO NANO, which communicates directly with the IF1 via the connector, and the other is a RASPBERRY Pi ZERO W or alternatively a BANANA PI M2 ZERO, which act as a daemon (see Fig. 3). This deamon controls the ARDUINO NANO, stores data on a micro-SD card and also establishes a WiFi connection. Unfortunately, the price of the Raspberry has risen from 10€ to 100€ in the last two years. The BANANA is therefore a good alternative at only 40€. The total cost is now around 70€. The initial set-up of the OQTADRIVES may be a bit of a hassle as it requires LINUX. If necessary, you can have the initial SD card set up by a LINUX-savvy friend. Upgrades are then easily obtained via the PC. On the board there is also a small shaking motor that produces the sound of a softly humming microdrive. Real vintage feeling!

Now a few words about the application. Of course, all IF1 commands work in a familiar way, such as

FORMAT, CAT, LOAD/SAVE*, ERASE,...

Desired programmes are either written directly on the ZX SPECTRUM or read in e.g. via EAR with LOAD and then saved e.g. with

SAVE*"m";n; "NAME" to the "Drive number N" (1<=N<=8 [For non-mathematicians: 1-8 jg]). Alternatively, the OQTADRIVE can be connected to the PC via **http://IP-Adress:8888**. A user interface (UI, see Fig. 4) then opens, which can be used for flashing, status queries and loading programmes (as .mdr files).

Figure 4: User interface for WiFi connection

Fig. 4 shows the contents of one of my two OQTADRIVES. The eight drives were created by me using the FORMAT command on the ZX SPECTRUM and partially filled with programmes. The software for the OQTADRIVE is in constant development. The latest version is 0.4.0. This version allows direct communication between the ZX SPECTRUM and the Deamon without the interposition of a PC. This works by creating a drive with the name "OQTACTL". In fig. 4, this is drive 3. The contents of this directory are periodically read by the daemon, and if there is a file named "OQCTL" in this directory, it is executed. In this way, for example, the configuration file in the daemon can be changed from the ZX SPECTRUM. Until now, this was only possible by directly editing the micro SD card under LINUX. An important example is the change of the SSID and the password, in case you want to operate your ZX SPECTRUM outside the domestic network. The corresponding command is then the following:

Figure 5: The config file with MOVE TO #2 on the screen

OPEN #4; "m";3; "oqctl": PRINT #4; "wifi SSID:Password":CLOSE #4

Drive 3 must therefore be selected, as this is the drive named "oqtactl" in my case. Another example is to change the speed of the shaker motor, e.g. to 40:

OPEN #4; "m";3; "oqctl":PRINT #4; "config rumble 40":CLOSE #4

In addition, the directory "OQTACTL" permanently contains a text file "drv" which shows the allocation of the eight drives (in fig. 4, left). If you want to see this file, write:

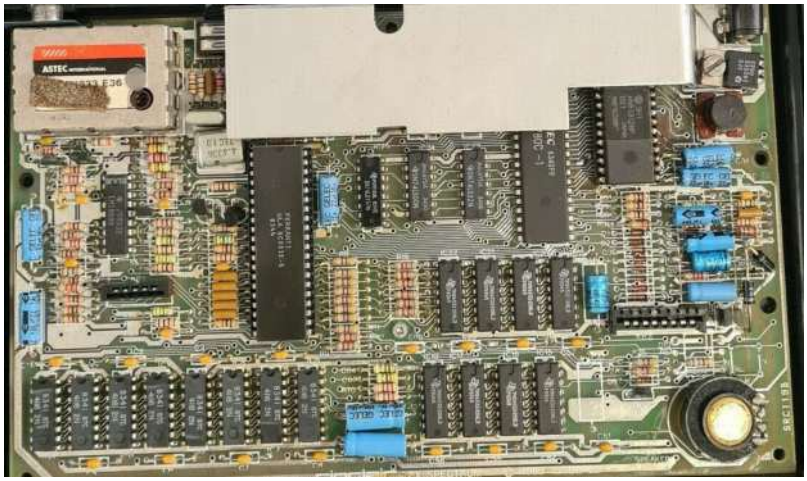
MOVE "m";3; "drv" TO #2

Proceed in the same way with the file "config", which contains the settings of the OQTADRIVES including the IP address of the unit (see Fig. 5). This enables a very comfortable coupling between laptop or mobile phone and the OQTADRIVE. These are very useful additional functions that the original IF1 naturally does not have.

All in all, the OQTADRIVE is a very nice development that will give the microdrive-based software another long life. Finally, it is worth mentioning that the OQTADRIVE can also be connected to the QL and be operated there. Drives 4-7 in Fig. 4 are QL drives in my case. Of course, it is not possible to exchange ZX SPECTRUM programmes with the QL in this way, you cannot read crosswise. But you only need one OQTADRIVE for two different machines, because both formats coexist. In the case of the VDRIVES, you need two devices. With the original microdrives, I'm not sure whether the ZX drive also runs on the QL. I have not tried it out yet.

RECONSTRUCTION OF A ZX SPECTRUM 48K

BY BURKHARD TAIGE



Before I come to possible alternatives for discontinued ZX SPECTRUM parts, a short report about what I mean by a "burnt" original mainboard:

At the well-known online action platform, a ZX SPECTRUM was offered with the note "not used for a long time - cannot test - therefore as a spare part". As a successful bidder of such an object, one presumably assumes that such a SPECTRUM cannot be destroyed by "non-use" and hopes at least for a pool of spare parts...

The photo of the circuit board from the offer text does not suggest anything bad at first, although the ROM-IC seems "somehow strange". It is not original to a version 3B board in a socket.

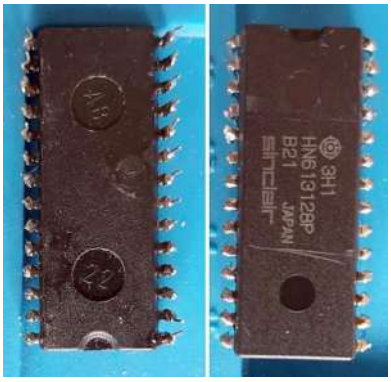
The following findings on receipt of the auctioned ZX SPECTRUM: Case with defective keyboard membrane but otherwise in good condition. The case was opened, fortunately the original screws were included. The ROM-IC revealed the real damage - it was put on a socket, which should be rather advantageous, but not so with this part.

There must have been some collateral damage during the installation of the base. In the lower area, you can see wires that were soldered onto the thin conductor tracks. Strangely enough, the contacts of the IC socket contain brown adhesions, which probably come from the flux of the solder. But why solder on an IC socket?

The solution becomes apparent when looking at the ROM IC. The pins had simply been cut off in the upper area and later extended by thin wires. The wires were probably inserted into the IC socket and then soldered to the IC, which was probably placed on the socket for this purpose.

The ROM survived this procedure, however, because the memory content could actually be read out.

However, the wires were much too thin to be "plugged" into a socket. "Threading" would still be possible ...



Because of the thin tracks on the PCBs, it is indeed often more practical to cut out defective ICs at the "legs" first and then solder out the remaining pins. This avoids cutting the tracks when levering out an IC. In this case, it must have been noticed that traces were damaged when the ROM was unsoldered and pulled out, and it was then decided to "cut out" the IC.

With leaded solder (which was used on the original boards), it is also necessary to resort to old stock. The seller of this Speccy had probably used a very special solder containing flux.

The solder side at least shows considerable rosin residues. Pin 27 has no "soldering island" on this side either. So I unsoldered the IC socket and first examined the damage.

Fortunately, the ULA IC is socketed by default, so you can take it out and test it on a working board. At least that was OK and so the purchase was almost worth it (original ULA and coil, if you can find them on sale somewhere, go for a good 50,-€ together, plus shipping costs, which are quite hefty for items from the UK, plus import duty). Further troubleshooting revealed defective RAM ICs and the CPU itself was also defective.

Nevertheless, I took it upon myself to try and revive this board. I still had RAMs of the 4116 type, so I soldered in the sockets and plugged them in. I ran out of IC sockets for the "upper RAMs". Since I had a Z80SRAM available and the CPU was defective, I decided to use it instead of the additional 48K RAM and the Z80 CPU. The Z80SRAM was soldered in without a socket so that the board would also fit into a "rubber key" case. Since the ROM IC was still working, I first removed the thin wires and instead soldered the IC legs of a defective IC. It doesn't look nice either, but the ROM is mechanically easier to put into the IC socket and to take out again. Replaced all electrolytic capacitors with new types, made a "video mod" and installed a switching voltage regulator so that the cooling plate can be omitted. However, when I measured the track connections, I found that there

was an interruption between ROM pin 3 and CPU pin 37.

Above the middle "solder eye" you can see what looks like a triangle on the track. In fact, the trace is interrupted here. The bright, triangular-shaped spot was probably caused by a lever tool during ROM-IC disassembly.

Unfortunately, I only noticed this mistake during testing, after the new IC socket was installed ...

A short wire had to be soldered to the underside of the board and then the test ran without error. It's not the perfect ZX Spectrum board, but it has a remarkable history.

In the next article we will really continue with replica boards and alternatives for assembly.

Burkhard Taige

RECONSTRUCTION OF A ZX SPECTRUM 48K - PART 4

To avoid having to deal with a destroyed original board, a replica board is a good basis. From my own experience I can say that the often offered Issue 3b clones are quite usable. They are available in different versions, which differ in the colour of the board, tracks (colour versions "silver-plated" and "gold-plated") and of course in price. If you want to commission such boards yourself, you can find the Gerber files here, for example:

https://www.pcbway.com/project/shareproject/ZX_Spectrum_48_Issue_3B_Redrawn.html

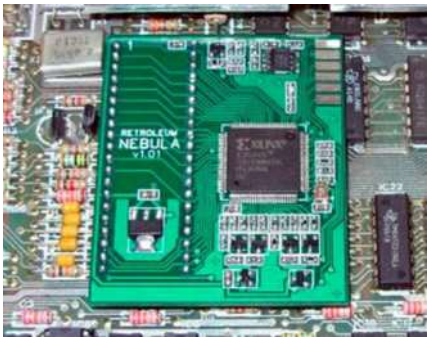
The circuit board can also be ordered from "pcbway" (minimum purchase 5 pieces). Alternatively, they are available at a somewhat higher price from www.pcb4diy.de, who often offers them in the online auction house (still somewhat more expensive).

On the website

https://spectrumforeveryone.com

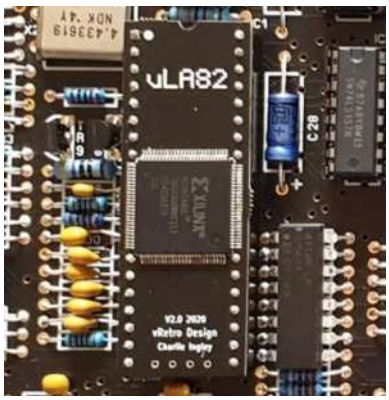
you can download service, circuit and assembly diagrams for the Issue 3b board (and others)" in the "Technical" section.

First of all, the parts list in the service manual for the Issue 3B board should be looked at. Here you will quickly realise that some parts are long out of production. Especially the ULA and ROM IC, which are the "heart" of the ZX-SPECTRUM.



There are rebuild projects for the ULA circuit, but they are not always available either. There is the NEBULA for example, this is an ULA replacement, on a rather "bulging" circuit board, which is plugged into the IC socket.

When using this part, please note that the IC 25 and IC 24 are protruding from the board and must not be placed on the socket, otherwise there is no longer sufficient support in the ULA socket. The NEBULA is offered for about 50 € (incl. shipping) by the SINTECH shop.



From New Zealand comes the ULA replacement vLA82, which is also available for approx. 50 € incl. shipping and customs duties.

This component does not cover any neighbouring components, but it is slightly higher than an original ULA. In the existing IC socket, space becomes very tight in a "rubber-key" case.

The ROM-IC, a Hitachi HN613128P or NEC D23128C is no longer produced and is rarely available second-hand (for about 20,-€). It is easier to use an EPROM-IC (27128 or 27256). The 27C256 is available for about 5,-€ at various electronics shops. To "burn" such an EPROM, however, a programming device such as the TL866 II+ is required, which costs about 60,-€.

The video modulator IC LM1889 is also absolutely necessary, which is also only offered as a remaining stock at prices starting at 6,-€ (with an upward tendency), rarely.

Unfortunately, the RAM IC's in the ZX Spectrum are quite vulnerable, as the address and data and voltage lines are unprotected at the expansion connector. A module that is slightly tilted or not plugged in correctly will destroy one or more ICs within a very short time. Most SPECTRUM'S offered as defective have met exactly this fate.

These RAM's are offered for about 2,-€ per piece. Ordered directly in China, you get about 5 pieces for this price - however, at this price it can happen that up to 100% of the chips ordered are defective! The lower RAM ICs of type 4116 are particularly susceptible.

Now at the latest, it should be clear to everyone, based on the prices for these few important components, that a material price of over €100 must be calculated for the assembled board alone. Costs for a case (30,-€), keyboard foil (14,-€), rubber mat (14,-€) and metal cover (15,-€), which are available as new replica parts from SINTECH, have to be added!

The ZX SPECTRUM also needs the coil described at the beginning - a Briton offers new coils for about 20,-€ + shipping ...

For all other parts, replacement types can be found, or these are still in production and can therefore be obtained cheaply.

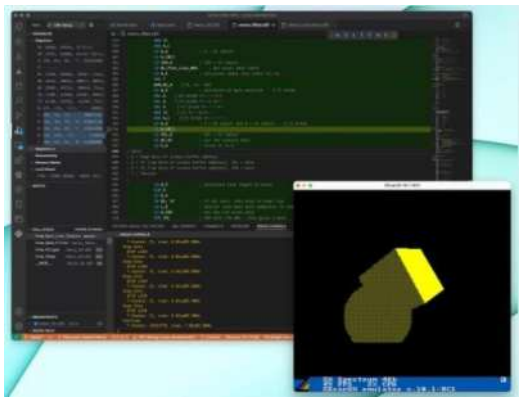
For anyone who is still not deterred from such a project because of the costs, I will go into further "problems" in the next article and what solution is available for the circuit board assembly.

Burkhard Taige

RETRO PROGRAMMING WITH MODERN MEANS SOFTWARE DEVELOPMENT FOR SPECTRUM AND CO. ON THE PC

From the magazine »HOME COMPUTER« of the Home Computer Group, issue 4/2022

X-DEV Z80



Cross development uses today's powerful systems to develop solutions for older devices. In this ease, we are going to use Visual Studio Code from Microsoft to cross develop for ZX Spectrum (Z80)

! *These procedures have been tested and developed on macOS.*

Most likely, they could also work on Linux.

For Windows, things are different, and in the repositories, you can get the precompiled versions. Anyway, there is no guarantee for them.

Setting up the environrnent requires:

- *Visual Studio Code and some of its specific extensions.*
- *sjasmnplus*
- *ZEsarUX*

SJASMPLUS

This software is an ope-source command-line cross-compiler of assembly language for Z80. It has designed to work on Linux, BSD, maCOS, and Windows. You can compile it on your platform with no effort at all. Compared to other solutions, it offers several benefits, like the integrated Lua scripting engine.

Before installing it, you must download the source oode and compile it by hand. This is not a complex task, but you need to have the macOS developers' tools. That means you need Xcode.

```
$ sit clone --branch v1.18.3
   https://github.com/Z00m128/sjasmplus.git
$ cd sjasmplus
$ make
$ sudo mkdir -P /usr/local/bin
$ sudo make install
$ sjasmplus
```

Installing sjasmplus on macOS/Linux

Linux users, depending on the flavor, should install some specific package.

Once you have the developer tools, you can proceed to download the code from the GitHub

`https://github.com/z00m128/sjasmplus`

The Windows users can download the zip file available in the repository. It contains the binaries, so, nothing to compile on that OS.

ZESARUX

If FUSE is a wonderful emulator from the standard user point of view, on the other hand, ZEsarUX offers the ZRXP protocol, which is a must for the developer. The User Interface is proprietary and does not integrate well in either macOS or windows.

In the beginning, it is even hard to get comfortable with it, however, it offers many options precious for the developer. You can read more about this emulator in the GIT section of this issue.

Here, our scope is just to install and setup ZEsarUX for the cross-development using Visual Studio Code.

As for sjasmplus, this emulator is also available on Github.

`https://github.com/chernandrezba/zesarux`

The repository also contains the ready-to-use compiled version for Windows.

MacOS's users need to compile it from the source code, the same applies to Linux users.

```
$ git clone --branch ZEsarUX-10.0
https://github.com/chernandezba/zesarux.git
$ cd zesarux
$ ./configure --enable-memptr
   --enable-visualmen – enable.cpustats
$ make clean
$ make
$ sudo make install
```

Installing ZEsarUX

They should also read the file named INSTALL, which is located in the src subfolder. Using the proper command line options, it is possible to compile an optimized version. The same Works also for the raspberry-pi users. So, read that file before compiling ZEsarUX on Linux.

On macOS, the sjasmplus and zesarux are installed inside **`/usr/local/bin`**, which could be not in your search path.

Regardless of the OS, you are using, to enable the remote debugging, there are some Zesarux options to be configured.

Now, start the emulator using:

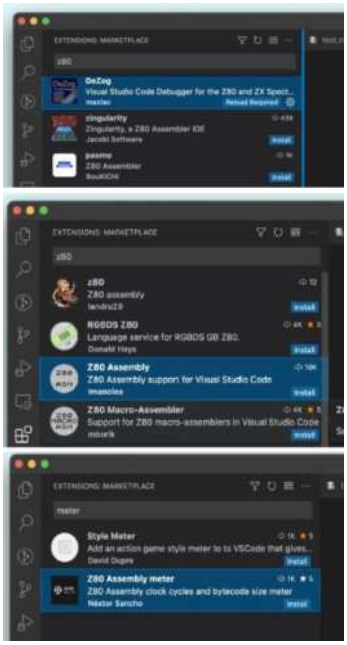
`$ /usr/local/bin/zxsuruc`

Click on the screen to open the menu, then:
Settings → Debug → ZRCP → Remote protocol.

When you will activate that option, macOS asks for permission to allow zesarux to accept the incoming connection.

Allow it. Visual Studio Code needs to connect to that emulator.

VISUAL STUDIO CODE

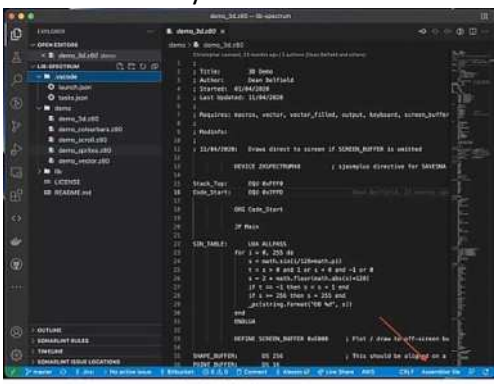


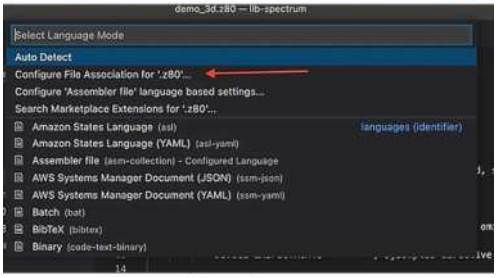
So far, you installed a powerful assembler for Z80, and an emulator to run your programs. The last step is to install a full-featured IDE.

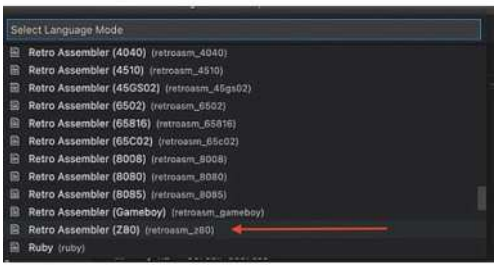
From Microsoft, we have this wonderful IDE, although based on the electron technology, is very good and it's the same in every OS. This means that what follows, works on every OS.

Microsoft Visual Studio Code is not only for "retro programming". It is a serious and highly configurable solution for professional developers. Everything you will learn on it is a good investment.

Go and install it directly from the Microsoft website:







`https//code.visualstudio.com/download`

This IDE knows nothing about Z80, so, we need to install the plugins that will enable a comfortable user experience.

For at good syntax highlight, consider installing the Z80 Assembly by *Imanola*. For the remote code debug on the zesarux emulator, install *DeZOG* by *maziac*. Last but not least, there is a package that can count how many cycles the code takes: Z80 Assembly meter by *Nestor Sancho*.

Now we can start configuring the *Visual Studio* Code to use *sjasmplus* and *zxsarux*.

Fortunately, you have to do this prooedurejust once. Open this project from GitHub using visual studio code:

`https://github.com/breakintoprogram/lib-spectrum`

After the checkout, you have both source code and IDE config files.

Open the launch.json file and delete the row containing "topOfStack". So, you are done at 99%. If you open a Z80, you will see the assembler listing with no syntax highlighting. However, Visual Studio already has recognized it as assembler code. Now you have to associate the file extension to the Zilog Z80 source code. That is neither a complex nor mandatory task, and the instructions are inside an image.

Well, now it is time to play a bit.

START ZESARUX

In Visual studio code, select a Z80 file from the demo folder, for example, demo_sprites, and start it the way you used running a program in visual studio code.

It is amazing, it is not'?

Starting from here, you can feel the power of DeZOG, which integrates into visual studio code to provide an experience similar to what you would expect from Eclipse, Visual Studio, or Xcode.

The tools provided by maziac are really precious and useful. The DeZOG itself should win the Nobel prize. Of course, this is not the only option, but it works on different operating systems, and it is cool. You can use your work tools to have fun.

From using an existing program to writing your own, it is a long way. Getting the right tool to do the work is just the first step.

When you develop for the 8bit world, you are in direct contact with the hardware. The system has limited resources. and abstraction in the project does not help. You have to know very well the CPU, and its opcode. It is required to be clear about what each opcode does, and how it does it. Consider the extract from the screen_bufffer 1ibrary.

It clears the screen using the PUSH instructions and avoids looping on too few instructions. That is because branching costs CPU cycles.

If you think that a C program can solve any problem, it is just because you never programmed using the assembler.

And without the assembler, there is no contact with the hardware at all.

This is curious because computers are hardware.

TRIUMPH ADLER »ALPHATRONIC PC8«

BY JOACHIM GEUPEL

The Nuremberg manufacturer TRIUMPH-ADLER is a German company that is actually better known for its extensive range of office machines such as the typewriter "GABRIELE", screen writing systems, invoicing machines and desk calculators. In fact, in the years between 1980 and 1990, the company was also reasonably successful as a supplier of various computer systems in the competitive market for small and medium-sized computers.

TRIUMPH ADLER began in the 1970s with the TA 1000, a computer for medium data technology that was used, for example, in municipal administrations, for warehouse management and bookkeeping by tax consultants. It also served the German "Deutsche Bahn", the railway company, where it was used in ticket counters. In 1980, the computer systems "ALPHATRONIC P1" and "P2" were introduced, which could be used universally. Inside them, the then ultra-modern 8085 processor from INTEL did its work. The operating system was either MOS or a modified CP/M. I had my first contact with a P2 during my training in 1983, when I took part in a course on COMPUTER CONTROLLED MEASUREMENT TECHNOLOGY. The computer was extended with an IEC bus interface and could be used to control measuring instruments by means of an extended basic.

The series of computers built by TRIUMPH-ADLER continued into the 1990s. The end of TRIUMPH ADLER's computer era cannot really be pinpointed. The TA DARIO 386, which ran MS-DOS 5.0 or MS-DOS 6.22, came out sometime towards the end of the 1980s, followed by a whole range of notebooks and laptops such as the "WALKSTATION SYSTEM 386/33".

If you want to know more about the TRIUMPH ADLER computer range, please visit the Wikipedia page

https://de.wikipedia.org/wiki/Triumph-Adler.

TRIUMPH-ADLER, which is now part of the KYOCERA group, has largely withdrawn from the computer business, i.e. the sale of computer hardware, and has become a service provider in the field of MANAGED DOCUMENT SERVICE.

The ALPHATRONIC PC8 can claim to have occupied the top position of my desired computers for a while. From October 1984 to January 1985 I was employed in a computer shop, which I have told you about here before. The shop sold various home computers as well as the quite respectable CP/M computers from EPSON, the QX-10 and of course the aforementioned ALPHATRONIC PC8. The shop-ownwer was actually a failed building contractor who had led his construction company into bankruptcy and then tried to make his fortune in the computer trade. What he understood, at least in the early days of his career as a computer salesman, was that it makes sense to move with the times. An electronics engineer hired by him completely redeveloped the floppy disk drive of the ALPHATRONIC PC8 and replaced the 5-1/4" drive with a much more modern 3-1/2" double floppy disk station. This combination of ALPHATRONIC PC8, 3-1/2" floppy disk station with the CP/M 2.2 in use at the time as well as a whole range of software such as word processing, spreadsheets and telecommunications software along with acoustic couplers sold like crazy and he replaced his small Mercedes with a large one. He was successful for a while, could afford a big car and a young wife, but went bankrupt again in 1986 because he had gambled away with the computers. The multiple bankruptcies then led to an equally long prison term for bankruptcy delay and multiple frauds against suppliers and other dealers. The car and the young woman also fell by the wayside...

The ALPHATRONIC PC can boast quite respectable data. The 8085 processor used in the previous computers was replaced by a Z80 clocked at 4 MHZ. The memory was 64 kB and with the 32 kB system ROM, MICROSOFT BASIC 5.11 was available. The power supply was built in and the unit weighed about 3.5 kg.

It was possible to connect a floppy disk drive. The computer did not have a built-in floppy controller. There were available external floppy drives with the floppy controller integrated, this could be expanded with a second drive without a controller. CP/M 2.2, later CP/M 3.0, could be loaded via the floppy drive.

Figure 1: Alphatronic PC with 5 1/2" floppy disk drive

This also provided a diskette basic and software such

Figure 2: Power-on message, MS-Basic 5.11

as WORDSTAR, DBASE and MULTIPLAN.

The ALPHATRONIC PC is richly equipped with interfaces. On the left side there is an RGB output for connecting a colour monitor as well as a BAS output for the then obligatory green monitor. An external video modulator could be connected to a television set. A cassette recorder was connected to a 9-pin DIN socket. On the back there is a V.24 interface with a 25-pin Sub-D socket, the data speed of which is set internally on the computer with DIP switches. The Centronics interface for connecting a printer is a rather unusual two-row male connector that requires a specially made cable to be able to connect a corresponding printer.

Figure 3: The inner workings of the Alphatronic PC with self-made power supply

Between the V.24 socket and the Centronics connector is the expansion bus to which the floppy disk drive is connected. As soon as this was connected, the 32kB ROM was off and a boot ROM was active. This meant that only the data that could be loaded via CP/M was still available.

On the top there is a module slot where software extensions could be plugged in. The power switch is on the right-hand side.

Two years before the Corona pandemic, I discovered a tiny little advertisement in the "To Give Away" ads in the Reutlinger Generalanzeiger offering an old computer from 1985. The only condition was that it had to be collected, a contact by email address was given. Of course, I got in touch right away, expecting that a whole lot of retro computer maniacs would get in touch besides me. For the first few days, I checked my inbox almost every hour, but there was no response. After weeks of no response, I finally gave up hope, thinking that I had come too late. Half a year went by when I finally received a reply in the form of a phone call. I had long since lost track of the computer and first had to be reminded of the advertisement. When I asked how many people had responded, the lady answered: "Only you!" So I got into my car and drove to the given address. There was an ALPHATRONIC P2, i was asked if I really wanted the old thing. I can still see the lady's doubtful look...

Of course I wanted the computer. So I was loading the P2 into my car when the lady said she had another one, would I be interested in it? You can probably guess the answer. She brought me a rather dusty and dirty computer, which I immediately recognised as the ALPHATRONIC PC8 I had always wanted.

Once home, both computers were cleaned and repaired. The P2 booted up immediately and asked for the boot disks, which were kindly included and still completely readable. The PC8, on the other hand, made no sound, let alone a picture. So I turned my attention to the P2. It worked for a few weeks without any major problems. I cleaned it, lubricated the guide rollers of the disk drives and - voila! - the unit worked until... When I switched it on at some point, there was only a soft cracking sound. Nothing moved, but after a few seconds a cloud of smoke rose from the computer. So I unplugged it, opened the case - the damage was a complete total loss. It took me a few hours to determine the actual damage. Immediately after switching on, a fault had occurred in the power supply unit, which caused an unregulated operating voltage to spread across the entire electronics. The result was that really everything was defective. Not a single Ram, floppy controller, the processor board - in fact, everything was ruined. The trace of the overvoltage could even be followed visually. I tried for a few more weeks to fix the various faults, but at some point I had had enough, the computer ended up in the electronics scrap and I was rid of the corpse. So my attention turned to the PC8. It was clear to me that the power supply was also defective there, because all the voltages were missing. I tested the motherboard by simply supplying the necessary voltage via two external laboratory power supplies. The computer started immediately, so the computer itself was fine.

In my collection of components there was still a small transformer that had two secondary windings. A +/- 12 volt power supply was quickly designed and built. At

Figure 4: Character set with listing

the same time, Pollin offered a 5 V mini switching power supply, which I bought. The power supply replacement worked immediately, the computer ran again.

What I like about the computer is its compact design. When you hold it in your hand, it looks compact and stable. The keyboard is a German QWERTZ keyboard. On the right-hand side, just off centre, there is a function key pad with six keys. Next to it is a three-key block with the keys for basic mathematical functions, i.e. " + , - , * , / " and " = ", and immediately below that is the numeric keypad with an additional return key - so almost the usual arrangement. The target group of users was not hobbyists and home users. Rather, the computer was intended to be used in an office. However, the developers had not lost sight of the hobby and home user sector, as there is a socket for connecting a standard cassette recorder.

What always bothers me, however, is the missing backspace key, which on a normal keyboard is located above the return key, immediately below the F6 function key. In its place is the key for switching to graphic characters. Every time I type something and make a mistake, I reflexively hit this key. The actual INS/DEL key is next to the arrow keys in the bottom row of the keyboard.

The light-coloured key in the function key block is a key cap from another computer, as the original was missing.

After so many years, I still like the computer. Its technical specifications are quite remarkable for the time, but at some point the competition was far too great. Only two years later, the much more powerful computers from ATARI and COMMODORE came onto the market. These devices were more comfortable to use and had a more modern design. The ALPHATRONIC PC8 disappeared from the scene without a sound and nobody ever missed it later - maybe with the exception of me.

Technical data	
Year of release:	1983
Processor:	Z80
Clock frequency:	4 MHz
RAM:	64 KByte
ROM:	32 KByte (incl. Microsoft Basic 5.11)
Operating system:	own, CP/M 2.2, later CP/M 3.0
Graphics chip:	Mostek 6845
Text mode:	40 x 24 / 80 x 36
Graphic modes:	160 x 72 (640 x 288 in blocks of 4 x 4)
Colours:	8
Sound chip:	none
Sound:	1 tone generator
Keyboard:	Typewriter, QWERTZ, 85 keys, offset numeric keypad
Drive:	External drives F1 and F2 (5.25", 320 KByte) connectable, F1 with own controller, F2 attached to F1
I/O:	1 x module port (30-pin), 1 x Centronics, 1 x V24, 1 x RGB, 1 x video, 1 x cassette

References:
Wikipedia, Homecomputer Museum, 8-bit Nirvana

ADVENTURE CORNER
BY THOMAS EBERLE

Hello everybody,

after there was no Adventure Corner in the last issue, we continue where we left off in the last issue. In 2020 a lot of adventures appeared, unfortunately it ebbed a bit with the death of JOHN WILSON in May 2021. But in the meantime a new generation of authors has emerged who are busy producing adventures.

To understand more precisely what an adventure game is about: it is often not just a game, but a story. It is not uncommon for a book to be converted and made interactive in this way, famous examples being "THE HOBBIT" or "LORD OF THE RINGS". But also most new authors are actually novelists and the adventures simply their way of publishing the stories. Especially with text adventures, a lot takes place in the imagination, the author imagines his own world and with the texts the user finds an entrance into this world. So it's important: a good adventure writer must also be a good novelist, otherwise he won't be able to create the atmosphere. That's exactly what we want to assess and present a selection of the best adventure games here, although this is always a matter of taste. In the meantime, graphic adventures are also on the rise again, so the atmosphere is still graphically underlined. So dive into the world of knights and goblins, aliens and spacemen, adventurers or ordinary people who experience fabulous things.

Here we go...

»ALL HALLOW'S EVE 1881«
MANCAVE SOFTWARE

The adventure is set around a building in the 19th century, the disappearance of some children is to be solved. You are quick in the imagination in foggy Great Britain, even if the description describes nothing of fog

or gloom. Nevertheless, it has an eerie atmosphere and you soon feel a sense of achievement. But the vocabulary is not very large, after finding the key I needed several attempts to open the lock. Not "open gate", not "put key into keyhole" and not "insert key" either. The words "put" or "insert" were not understood at all, the correct word was "unlock gate". That's a bit awkward if you can only use the exact words the author came up with, especially since you don't know what to open, the gate or the lock. A bit of a pity.

Download at:

https://mancave.itch.io/all-hallows-eve-1881

This brings us to the year 2021. I would like to mention that there were also a lot of Spanish-language adventures, but I can't present them because I don't know the language. If someone wants to help out here, we will gladly accept reviews from other readers.

»FATHERS DAY«
QUANTUM SHEEP

A small adventure game for Father's Day.

The adventure is set in a small room. Funnily enough there were four files when downloading the game, but it seems to be the same game four times, each only 9kB in size. The only difference is the last message at the end. Accordingly, the game is simple in every respect. It doesn't contain much text, not much atmosphere, no suspense. The solution has to look exactly like the author thought it up, you can't use "INSERT" for example, because the parser doesn't know that. So you have to use "put into" instead. So there are more examples. In the end, it's a nice game where you can use a dictionary to find out what other synonyms there are for the same word and which one the author probably picked out. Not suitable for adventure professionals, but for beginners a nice little game with a quick sense of achievement.

Download at:

https://quantumsheep.itch.io/fathers-day

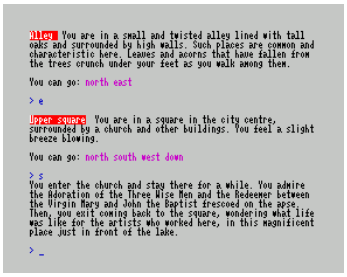
»THE DOOM OF THE POND«
IADVD/MOLOMAZO

This is a different kind of adventure game from Spain, although fortunately there is an English version. It really is a different kind of adventure game that is also fun. You don't have to guess so many words, because they are given. It is about a mysterious lake with all kinds of monsters and dangers. The selection of actions is done via a small menu. You choose whether to go somewhere, search something, look at something or hunt monsters. When hunting monsters, there is a small action element in between, where you have to press the fire button in quick succession, depending on your own strength and that of the monster. The rest of the game is typical for an adventure game with a little less puzzles, but many locations and dangers. If you don't want to type, you'll find a great adventure here.

Download at:

https://spectrumcomputing.co.uk/entry/37770/ZX-Spectrum/The_Doom_of_the_Pond

»SILK DUST«
DAVIDE BUCCI



After we have already presented two adventures with EMILIA VITTORINI, we now present the third. This game, too, takes us into a world not so dissimilar to ours, but nevertheless a different reality. The famous company ITA, represented by EMILIA, delivers a car to an Italian princess. But things go wrong. Is it sabotage? Who is behind it? As always in DAVIDE BUCCI'S stories, it is not just a game, but a tricky detective adventure and an interesting story. All the material has been divided into four parts, even though they are pure text adventures. So you can imagine what you need: paper and pencil, because there are a lot of locations, and drawing maps is absolutely necessary.

Save it for the long winter evenings. Game and reading fun guaranteed.

Download at:

https://darwinne.itch.io/silk-dust

»SINCLAIR 1: THE TRAIL BEGINS«
FRAN KAPILLA

Not quite a typical adventure game. Written two days after the death of Sir Clive Sinclair, this game shows some waypoints and decisions in Sir Clive's life. Would you guys make the same decisions? I think it's a really good reminder of a Pioneer and his life. It's not as tricky as a typical adventure game, basically you just have to make choices and you find out immediately if it was the wrong one or the right one. There are not umpteen paths leading to the goal, but only the one that Sir Clive once took. The game is accompanied by some well-done graphics and is definitely worth the download for every Sinclair fan:

Available here: SINCLAIR 1: The trail Begins at Spectrum Computing - Sinclair ZX Spectrum games, software and hardware

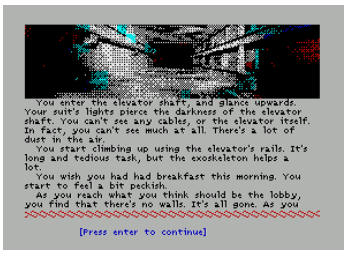
https://spectrumcomputing.co.uk/entry/36842/ZX-Spectrum/SINCLAIR_1_The_trail_Begins

»DREAM WALKER«
GARETH PITCHFORD

DREAM WALKER, not to be confused with the epithet of the action game "ALTER EGO 2", is a cleverly conceived adventure game by a true master of the genre. GARETH PITCHFORD has built an exciting story around the dreams of a man coming to terms with his childhood experiences. The adventure game offers many surprising moments, is always exciting and offers even for the beginner enough small feelings of success to be further motivated. What happened in that little farmhouse? You will only find out at the end of the 3-part adventure, or Harald Lack will tell us the solution in one of the next adventure solutions in this issue. Until then, you can download and puzzle for yourself:

https://worldofspectrum.net/item/0036880/

»THE FREAK«
JARI KOMPPA



"THE FREAK" is another adventure game where you don't have to type in the commands, but choose the options in a menu. The whole thing is based on the utiltiy "MUCHO" (Multiple Choice Adventure Engine) and is the second game by this author using this system. The first game "WAITING FOR THE light" from 2016 was not presented here, as there was no adventure corner then.

The story of "THE FREAK" takes place in a futuristic world in which you first have to find your way around. That means that the first thing you do is wake up against all odds and are sent to work unmotivated. Doesn't seem that futuristic to me...

What happens next, however, is hopefully still a long way off or will never happen, in any case the whole thing is exciting and absolutely deadly for the main protagonist. One wrong decision and you start all over again, thinking about what you could do differently.

The choice of decisions is not large, so that after a while you also come to the solution by trial and error. So it remains not too big a puzzle, but also enough motivation to try again and again. The story is exciting and well written, the graphics simply digitised and could be a little better adapted to the SPECTRUM. Overall, a good new attempt at a genre that has actually been around since the 80th but has relatively few representatives on the Spectrum. Well worth trying out. Download from:

https://spectrumcomputing.co.uk/entry/36946/ZX-Spectrum/The_Freak

»THE TIME MACHINE«
FRAN KAPILLA (SEQUENTIA SOFT)

The game is based on the famous story by H.G. WELLS and is actually an exact transposition of the book. As it is a very well known but also famous story, it is of course good and as not everyone remembers every detail of the book, (the film is not as accurate as the book anyway), the game is nevertheless exciting, full of puzzles, but above all very long. FRAN KAPILLA has made seven parts out of it. Admittedly, the first part is the intro and the last part the epilogue. But still, there are five parts to play through and, of course, to read. So it's clear that it's a very long adventure with many locations and a lot of text. Fortunately, it also has graphics that are really very good. So you can imagine the whole thing even better, but the many graphics are surely also a reason why so much storage space was needed.

Like some of the games I present to you in this issue, you don't have to search for the words here, but are given a range of options to choose from (multiple choice). The possibilities are quite varied, however, so that the solution rarely comes up on its own. Nevertheless, it is easier than the conventional adventure games and can also be played comfortably with a SINCLAIR joystick. If you fancy some reading and puzzling:

https://sequentia-soft.itch.io/the-time-machine-spectrum-english-version

»SABOTEUR DEEP COVER«
CLIVE TOWNSEND/ANDY REMIC

Any Spectrum fan is sure to know "SABOTEUR", any prequel to METAL GEAR SOLID or other hits. The original author is now giving SABOTEUR a comeback, but not in the form of an action game, but an adventure game. The suspense has remained, as an undercover agent you have to sneak up on people, take out guards and avoid other threats, find codes and hack computers. There is also time pressure, because there are pursuers. If you think too long, you will be caught. A really good idea and implementation, an adventure in the style of an action game. It's fun, tricky and entertaining.

Download the English version at:

https://spectrumcomputing.co.uk/entry/36977/ZX-Spectrum/Saboteur_Deep_Cover

The special thing at the end: Besides the download version, there were also versions in different languages, including German. This seems to be sold out by now, but maybe it will be reissued. Enquiries can be made at:

https://teknamic.com/product/saboteur-deep-cover/

This concludes the year 2021, and in the next issue we will move on to the current adventures of the year 2022. I look forward to being able to present you with the very latest games and hope the authors continue to be so active.

See you then, Thomas

ADVENTURE SOLUTION »THE GOLDEN BATON«

BY HARALD LACK

Hello Adventure Freaks!

At the very beginning there was an adventure series for the Spectrum known as "MYSTERIOUS ADVENTURES". This included several programmes, but some of them did not pass the "design stage". Therefore, from this point of view, the series is then actually incomplete.

At least in the beginning, however, the programmes still came relatively constantly (until the 11th part), and only later were there gaps. Parts 12 - 14 were never released, part 15 was only released once for SEGA as far as I could find out. That's why I would like to limit my considerations to the first 11 parts, all of which were available for the Spectrum. Most of the adventures were written by BRIAN HOWARTH - like the first part "THE GOLDEN BATON", which I would like to introduce today. It was published by Digital Fantasia in 1983. Of course, I will also provide the plan and the solution for all those who want to play through the programme "just like that". Of course, you can also cheat a little if you get stuck somewhere in the middle - that's up to you. In itself, the programme is not very extensive, but it does have a few tricky passages where you can't easily get away from the spot. As far as the plan of my printed solution is concerned, it is actually relatively structured, but the fact that there are some "relative directions" (e.g. go door) makes it a bit difficult to create a plan. After loading the programme, we see graphical representations of the locations we are in in the upper half of the screen, in the lower part there are the outputs, which are relatively sparse and not very informative here. The reason for this is that the programme uses an engine developed by SCOTT ADAMS at the end of the 70s. BRIAN HOWARTH used it for his adventures, especially as it is very performant. Those who are familiar with SCOTT ADAMS' adventures know that you can switch to text mode by pressing the ENTER key, which then reveals much better information, which is of course very helpful when solving the adventure. My solution presented below today uses their 30 locations, which I will list again afterwards. The plan can be found at the end of this article. But before we start solving this adventure together, I'd like to say a few words about the background story - after all, we want to know what it's all about.

The aim of our mission is to find the lost "GOLDEN BATON". Our ruler therefore sends us to a foreign province where we are supposed to search for it. This historical artefact has a power that can influence and restore the balance between good and evil. It was stolen by an unknown force from the palace of the elf king FERRENUIL several years ago, and the forces that are gaining the upper hand due to the absence of the artefact are already being felt in his kingdom. Thus, the country is now suffering from persistent drought and epidemics are also spreading more and more. Therefore, we should not take too much time with the recovery of the precious artefact. Unfortunately, all our predecessors have not returned from their search, which does not necessarily make us feel positive. So ultimately it is in our hands to save the land and kingdom.

So much for the scenario we find. Since time is obviously pressing, we want to set out right away. The enclosed map contains the following locations/items:

01) In a dense forest, very spooky / ragged cloak, pile of rotting leaves
02) In a tangle of prickly briars / coil of rope
03) Standing by a small stream
04) In a clearing by a narrow path / savage wolf
05) By an ancient oak tree
06) High up in the tree / small hollow in trunk, golden ring
07) On a long straight forest road (1) / wooden staff
08) On a long straight forest road (2)
09) By a stagnant pond
10) On the edge of a castle moat
11) At a closed portcullis
12) Atop a crumbling battlement
13) In a silent courtyard by an arch / eerie figure in black armour
14) Before a massive door / key
15) In derelict stables / ivory hunting horn, rusty old helmet
16) In a straw-strewn outbuilding / old oil lamp, hole in floor
17) In a chamber by a door
18) In an old torture chamber / large hammer
19) In the maid´s room / small mirror
20) In a sorcerer´s workroom / chunk of (glowing) quartz
21) In a large bare slimy room / grotesque lizard man, jewelled knife

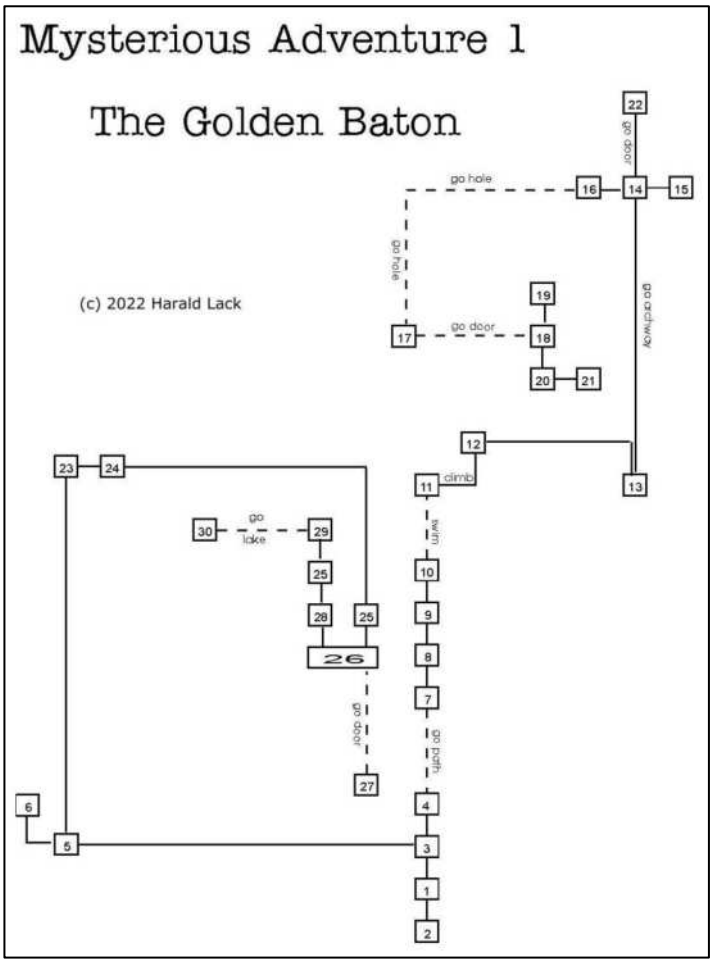
22) In a very cold room / ancient parchment, gorgon (turned in stone - nur wenn wir den Spiegel dabei haben)
23) In a forest clearing by an old cabin
24) In the hut / old barrel, oil sodden rag, salt
25) At the bottom of a staircae
26) In a passage facing a padlock door / heavy padlock
27) In an old sore room / small raft
28) In a cave facing a dark passage / large green slugs
29) Beside a vast lake / gigantic yellow crab
30) Sailing on the lake

So much for the locations and objects. On closer inspection, there are things you find in almost every adventure game, and by combining them in the right way, you will get further in progress, as it is in many other adventures. But this should not detract from the game experience. Before I present the step-by-step solution, I would like to make two small comments, which are not necessarily relevant to the solution I have presented.

1. If our matches have become damp, which can happen, you can rub the lamp. A little ghost appears and dries it for us. This is important if you want to light the lamp.
2. if the oil lamp runs out, it can be refilled by squeezing the "oil sodden rag".

So, enough of the preface, let's start at our starting point...

in a spooky forest: GET CLOAK, WEAR CLOAK, EXAMINE LEAVES (we see a shimmering sword), GET SWORD, S, CHOP BRIARS (with the sword we just found - we find a rope), GET ROPE, N, N, N (in this clearing we meet a wild, dangerous wolf), KILL WOLF (the sword is good for many things), DROP SWORD, S, W (a large impressive tree is here), THROW ROPE (the rope gets caught in the branches and is now hanging down), CLIMB TREE (there is a hollow in the branch), EXAMINE HOLLOW (we find a ring), GET RING (made of gold), EXAMINE RING (on it are engraved runes identical to those on the staff), WEAR RING, D (again at the bottom of the tree), GET ROPE, E, N (by a path), GO PATH, GET STAFF (made of wood - you can guess), N, N, N (the moat), SWIM (well, you have to like it), THROW ROPE (holds), CLIMB ROPE (onto the battlements), D (into the courtyard of the castle - here we meet a figure in black armour (perhaps Darth Vader?) who will only let us pass if we wear the cloak - quite devious), GO ARCHWAY (there's a massive door here), E (abandoned stables), RUB RING (a ghost appears and dries our matches - just in time), GET HELMET, WEAR HELMET, EXAMINE STAFF (there are strange runes on this too), READ RUNES (the magic word AKRYZ is engraved), REMOVE HELMET, DROP HELMET, W (the massive door), RUB RING (suddenly there is a key here - thank the spirit), GET KEY, UNLOCK DOOR, DROP KEY, REMOVE RING, DROP RING, OPEN DOOR (it is too early to go in this direction now as it would do us massive harm), W (a barn with straw on the floor), GET LAMP, LIGHT LAMP (only when the matches are dry we succeed), DROP MATCHES, EXAMINE STRAW (there is a hole in the floor - very



interesting), GO HOLE (we get into a chamber by a door), GO DOOR (torture chamber - well), N (the maid's room), GET MIRROR, S, S (the wizard's study it seems), GET QUARTZ (bloody hot - hands off), WAVE STAFF (something seems to be happening), SAY AKYRZ (the quartz shatters and white fire shines, slowly it gets darker and it rolls off the table), DROP STAFF, GET QUARTZ, E (in this slimy room we meet a grotesque lizard man), WAVE QUARTZ (a ray hits the lizard man and disables him), EXAMINE LIZARD (here we find a jewelled knife), DROP QUARTZ, GET KNIFE, W, N (torture chamber), GET HAMMER, W, U, E (by a very large door), HOLD MIRROR (very important, because the mirror reflects Gorgon's stare and turns him to stone - Medusa sends her regards), GO DOOR (lots of statues in here), DROP MIRROR, GET PARCHMENT, READ PARCHMENT (it says slightly cryptically: "sail lake. .... blow horn... thr... "), DROP PARCHMENT, S, E (we've been here before), GET HORN, W, S, U (on the battlements), S, S (by the moat), REMOVE CLOAK, DROP CLOAK, S, S, S, S (a small stream), W, N (in a clearing), GO CABIN, EXAMINE BARREL (the barrel contains salt), GET SALT, D (at the bottom of a staircase - a lit lamp is irreplaceable here), S (we see a door with a padlock - but we don't have a suitable key, so. ..), SMASH PADLOCK (the hammer makes it possible), DROP HAMMER, GO DOOR (storage room), GET RAFT, N, N (a dark passage where we see big green slugs), GIVE SALT (a good remedy against slugs - known to every gardener), GET SLUGS, N, N (a huge lake and a gigantic yellow crab is here), GIVE SLUGS (the crab eats it and gives up), GO LAKE (we sail across the lake in the small boat), BLOW HORN (a hand with the artifact we are looking for emerges from the water), THROW KNIFE

(this stops the hand - it doesn't move anymore), GET BATON and there is the final message:

Well done! You have succeeded!
Back home you will be a great hero.

Well, that makes us happy and we can soon turn to a new adventure in this series. Until then, have fun replaying.

Harald Lack

ADVENTURE SOLUTION
»THE ARROW OF DEATH (PART 1)«
BY HARALD LACK

Hello everybody!

In the previous article I introduced you to the programme "THE GOLDEN BATON" from the series of MYSTERIOUS ADVENTURES and showed you a solution. Today I would like to continue with another representative of this series, namely "THE ARROW OF DEATH (PART 1) ", and as you can already tell from the name, there is a sequel to it. But more about that another time. Today we will deal with the first part. It was written in 1983 by BRIAN HOWARTH, who will accompany us on this series. He wrote all the adventures in this series (together with a few other authors). It was originally published by DIGITAL FANTASIA, like all the works in this series as far as I know. The adventure is one of the easier to solve games of its kind, even if you have to figure out what to enter at one point or another. But more about this in the step-by-step solution. Originally, after loading, the programme starts again in graphic mode, which is quite nice, but not very helpful, because we get very little information that way. So we switch back to text mode by pressing ENTER and we know more, though not everything by a long shot. The solution presented below contains 47 locations that we have to cross to reach our goal. More about the locations and items below. But first the question - what do we have to do? Well, we have to take a brief look at the story behind it. And when I say brief, I mean brief, because there is not much to tell.

"A hauntingly poisonous atmosphere has settled over our homeland. The ancient artefact - Golden Baton - has become cloudy over the years and now radiates ominousness. So we can very easily imagine what our task is. We must find the source of evil and destroy it - or our demise is certain. Well, that sounds familiar, because it is usually five to twelve when such tasks come up and after no one else has been found, it is once again up to us to finally "turn fate to the positive".

As you can imagine, the solution to this problem is spread over both parts of the programme and that is why we want to create the conditions today to triumph in the end. But there is still a long way to go. We can only succeed with the ARROW OF DEATH and in today's first part, we are creating the conditions to create it. Since I know that many of you like to set out on your own, I would like to provide some general information at the beginning so that everyone can then decide for themselves whether they want to dare to do it themselves or follow my suggested solution.

First of all, the general information. These refer to the solution presented, although you may encounter other locations when playing yourself:

- Slaves should be freed
- Stones can be rubbed
- You can dig in different places
- The ferryman wants to be paid
- You can dip some things into a cauldron
- The sword also cuts metal things

So much for the general information. Now I would like to move on to the location description which corresponds with the enclosed plan.

1. In a palace courtyard / dead messenger, rope, amulet
2. In a palace
3. In a throne room / Zardra the magician, golden baton
4. In a place kitchen / sturdy hook
5. In the king´s chamber / bed, suit of armour, coat of arms, secret passage, pillow, purse, coins
6. In a secret vault / sword
7. At a crossroads / old beggar, glass orb, note
8. On a mountain road (1)
9. On a scree slope / ledge
10. In a hollowed out cliff shelter / cave entrance
11. in a small cave / giant serpent, arrowhead
12. On a mountain road (2)
13. In a dense forest
14. At the foot of a cliff
15. On the shore of a strange lake / ferryman, barge
16. Aboard a mysterious barge
17. In a dried up pool
18. In a ruined forest / broken trees
19. In a small clearing / chained slave
20. By a cook house / cook house
21. In a deep forest cutting
22. On a rocky ledge (1) / boulder, cave entrance
23. In a cave / scroll

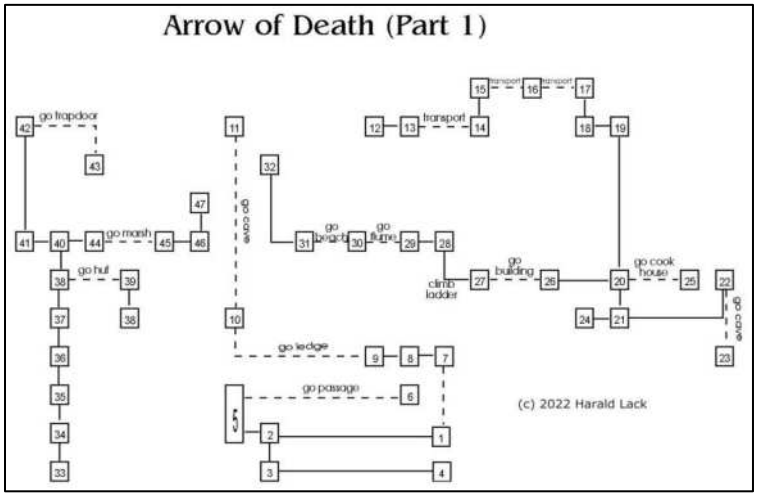
24. In a ring of toadstools / toadstools, drugged slave
25. In a giant cookhouse / cauldron full of broth
26. Outside a giant building / giant building
27. Downstairs in a giant building / drugged giants
28. Upstairs in a giant building / log
29. By a log flume / log flume
30. On a floating log / beach (dazu muss man erst mal warten)
31. At the base of a cliff
32. On a rocky ledge (2) / giant eagle
33. In a rolling green pasture (1)
34. In a rolling green pasture (2)
35. By a babbling brook (1)
36. By a babbling brook (2)
37. On a grassy path
38. On a path (1) / hut
39. In a wooden hut / dead dwarf, medallion
40. At a junction
41. On a path (2)
42. In a burnt-down village / charred debris, trapdoor
43. In a cellar / plaque on wall, ornate chest, ancient book
44. On a mashy road / marsh
45. In a marsh
46. In a circle of trees
47. In a willow grove / sacred willow, guardians

These are the locations/objects for the plan. I hope I have transcribed my handwritten notes without error.

Now I would like to show you the solution to this adventure. We start...

in a courtyard and from here we go on like this:

LOOK COURTYARD (we find a rope that we can put to good use), LOOK MESSENGER (an amulet can certainly be used as well), GET ROPE, GET AMULET, W, S, LOOK ZARDRA (before he dies he tells us our destination: we have to kill Xerdon with the magic arrow - but there is still a long way to go), E, LOOK KITCHEN (here is a very stable hook), GET HOOK, TIE ROPE (we tie the rope to the hook), GET HOOK, W, N, W, TURN COAT, TURN COAT, TURN COAT (you have to figure this one out - a secret passage finally opens up), GO PASSAGE, GET SWORD, W, LOOK BED (inside is an interesting pillow), CUT PILLOW (hidden inside is a purse and it contains. ...), LOOK PURSE (a few coins), GET COINS, GET ARMOUR, E, E, N, GIVE COINS (the beggar thanks you and leaves some behind), READ NOTE (it says: 'wait when all is lost'), GET ORB, W, W, HOOK ARMOUR, GET ROPE, GO LEDGE, PULL ROPE, DROP ROPE, GET ARMOUR, WEAR ARMOUR, RUB ORB (an entrance to a cave opens up), GO CAVE, RUB ORB (now there is also something to see), KILL SERPENT, KILL SERPENT, KILL SERPENT (a strong opponent but finally. ..), REMOVE ARMOUR, DROP ARMOUR, GET ARROWHEAD, S, D, E, E, WAIT (a fog transports us to a cliff), N, GIVE AMULET (now we are also allowed on his barge), WAIT (again the mist appears and transports us



to a dried pool), S, E, CUT CHAIN (we have freed the slave), S, S, U, MOVE BOULDER (the grateful slave is happy to help us), GO CAVE, READ SCROLL (it says: we need the eagle's feather), N, D, W, GET TOADSTOOLS, E, N, GO COOKHOUSE, DRUG CAULDRON, W, W, GO BUILDING (the giants are drugged), CLIMB LADDER, GET LOG, W, GO FLUME (we are floating on the river), WAIT, GO BEACH, U, PLUCK FEATHERS (the eagle picks us up and takes us to his pasture), N, N, N, N, GO HUT, LOOK DWARF (the guy has a medallion), GET MEDALLION, S, N, W, N, LOOK DEBRIS (there is a trapdoor under all the rubble), GO TRAPDOOR, READ PLAQUE (this is the "fletcher" house), OPEN CHEST (contains a very old book), DROP ORB, GET BOOK, U, S, E, E, GO MARSH, E, N, THROW MEDALLION (the guards are chasing the medallion), CUT BRANCH - and there is the rather surprising conclusion:

Congratulations! You now have all the necessary materials to make the Arrow of Death!

With this, we have the best prerequisites to venture into the second part of the adventure. I may present it to you here soon. Until then, happy adventuring!

GAMES 2020/2021

BY THOMAS EBERLE

Hello everybody,

I already reviewed some games in the last issue, but some of the reviews were also by Ellvis; however, these were left over from the previous issue. Unfortunately, I haven't heard from him since then, and our goal of providing an overview of very recent programmes at some point is in jeopardy. There are still over 100 new games a year, too many to present in our three magazine issues. Since we are still around the end of 2020 with our reviews, I would like to give a small overview, but only present really exceptional programmes.

As in the past, there are still a lot of programmes based on certain DESIGNERS or ENGINES. These games are for the most part very similar and we will therefore leave them out as far as possible or mention them only briefly. Nevertheless, there are some exceptions:

»DUCKSTROMA«
©2020 BY NARWAHL

Even though this programme was created with AGB (ARCADE GAMES DESIGNER by JONATHAN CAULDWELL), it is different from others. The first is the game idea, our hero (in this case a duck) can lay eggs. These explode and hurl the player through the air. This is extremely important for the big long jumps. That says most of it, because otherwise it's the usual platform game. You jump and search (in this case for disks) and try not to get too close to the enemies. You can jump on some of the enemies to flatten them, others you are not allowed to touch. This is a bit confusing at the beginning. But the use of the exploding egg is a good and new idea, even though I'm quite happy that the ducks don't actually lay exploding eggs.

The nice little game is rounded off by a funny AY melody, which reminds me a bit of the DIZZY games of that time (the connection to the egg is there, after all). The graphics are colourful and top-notch. Of course, there have been better graphics, but also much worse ones. All in all, it's a game to watch if you're not sick of the genre in general. You can download it for free or pay any amount for it:

https://narwhal.itch.io/duckstroma

»CYGNUS ALPHA«
© 2020 ILFORD

Who doesn't know ELITE. Well CYGNUS ALPHA is not the same, but there are similarities. For example, one element of the game is trade and of course it is set on a spaceship. However, there is no overview map of which stars can be visited and in general it doesn't seem to contain as much as its famous predecessor. I also noticed some disadvantages, e.g. you first have to watch the intro to find out what happens with which key. The controls are not definable and the joystick is not used, but that's not too bad, since you have to press buttons all the time anyway. At least: The annoying docking to space stations in Elite is no longer necessary...how many times did I unnecessarily lose space ships and thus the game. All in all, I have to admit that I didn't understand all the functions when I tested it, because unfortunately not everything is explained in the intro. For example, you can recharge the battery, but it doesn't say that anywhere. In the end, you have to try it out, which can be fun, but is beyond the time for this review. But in any case, it's a game principle that hasn't been used that often and is worth checking out. Download at:

https://spectrumcomputing.co.uk/entry/36522/ZX-Spectrum/Cygnus_Alpha

»BRICK RICK: GRAVEYARD SHIFT«
© 2021 JUAN J. MARTINEZ

They call this a game where you take out the bad guys by throwing bricks at their heads? I don't know. But the gameplay reminds me of BUBBLE BOBBLE, just without the BUBBLES. The screen consists of a few platforms. On these, the opponents and the player can both fall down and jump from the lower to the upper platform. In doing so, the player should not touch the opponents, while the opponents do not want to be hit by Rick's bricks, but that is precisely the aim of the game. A hit opponent must then be run over, then he disappears, not without flying back and forth on the platform again and thereby rendering possible other opponents who are there half unconscious as well. In this state, which is similar to being hit by a brick, you can also knock them out of the game. Once all the enemies are gone, a door opens into the next level.

Actually quite simple, but the game is fast, has precise controls, mediocre to good (monochrome) graphics and a nice game sound (AY). Level codes are also displayed so that you don't always have to start from the beginning. The game has everything it needs, but the gameplay is not varied enough. Nevertheless, it is fun for a while. Download for free from:

https://spectrumcomputing.co.uk/entry/37672/ZX-Spectrum/Brick_Rick_Graveyard_Shift

»ANTEATER«
©2021 DEFB STUDIO

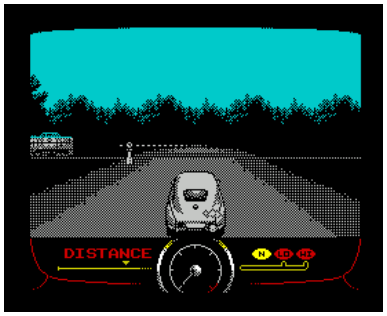
ANTEATER is a conversion of an arcade game from 1982. It is not the first conversion, but the best. Despite its age, the game principle is still unspent. The anteater drives his tongue into an ant hole and gets the ants. However, he has to be careful: The ants may only touch the end of the tongue, but not the middle in between. In addition, there are other creatures in the burrow that come into the picture from the left and right, e.g. larvae that may

only be eaten from behind, or spiders, which in turn may not touch the tip of the tongue.

The game is simply well made, with a short sound to start the game. It is simple, but fun. So much so that we already presented it at SCENE+ 76 a year ago, and now we have also presented the game to you in the magazine. If you don't have it yet, get it from:

https://spectrumcomputing.co.uk/entry/37654/ZX-Spectrum/Anteater

»TRAVEL TROUGH TIME VOL. 1: NORTHERN LIGHTS«
©2021 ZOSYA



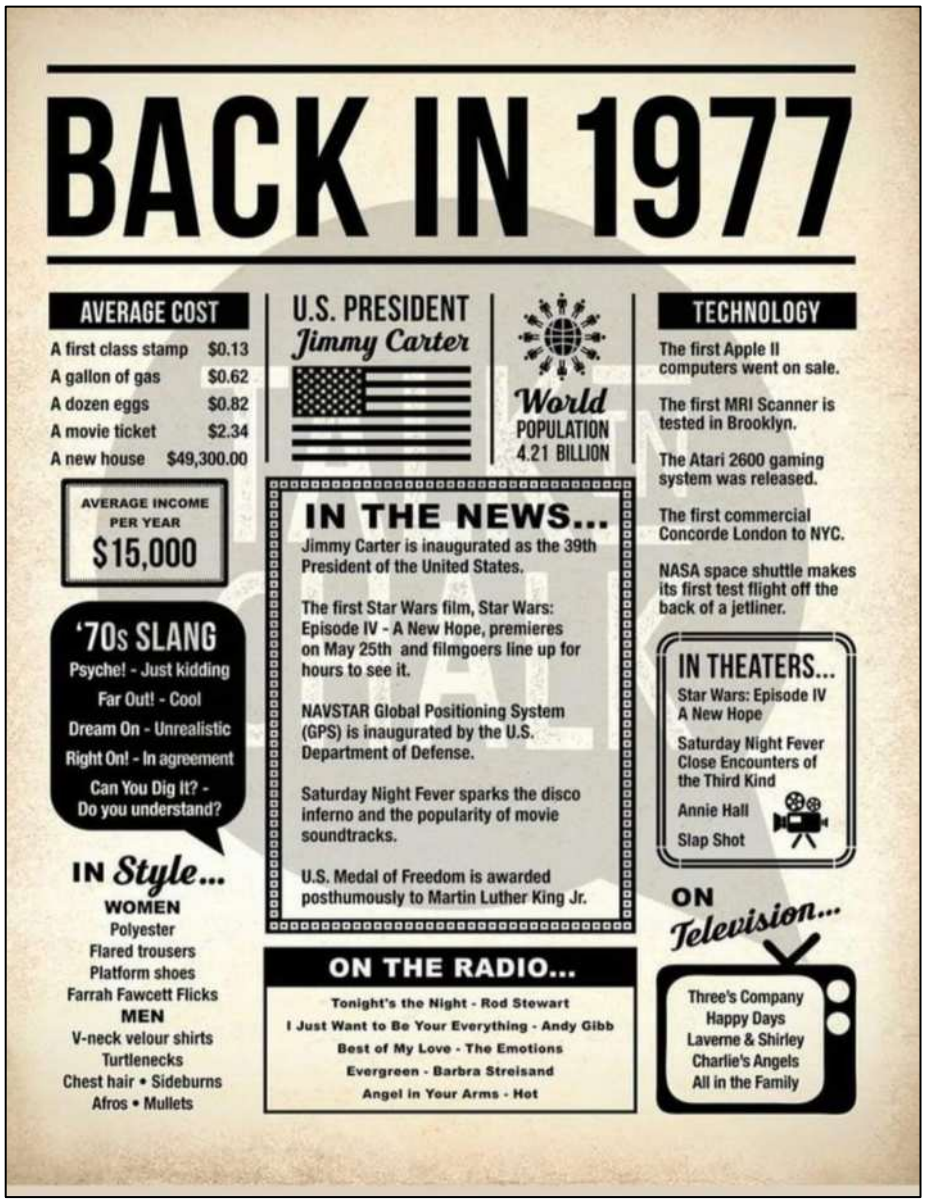
Sometimes you think, what if... if ZOSYA ENTERTAINMENT had already existed at the end of the 80s, people would have thrown away their Amigas to play the new SPECTRUM games by ZOSYA. It's quite possible that the people behind ZOSYA weren't even born then. Their work may not always be innovative, but it is of outstanding quality. This time is no exception. After the release of "DRIFT", a car driving simulator, it may sound like a remake that now a second game is coming, but "NORTHERN LIGHTS" is more. The game has a prologue, a story and also action elements. So you go out as a young guy to become a racing driver, to conquer the hearts of the fans, but also of the lady of your heart and, of course, to earn money. It is already clear from the opening credits that this is not a normal car racing game. In the first level, you just have to get there, without a time limit. But it makes sense to pay attention to the train traffic, otherwise your journey will end. The game continues with various races for which you have to qualify. You don't have to win, but you have to meet the minimum requirements. Then you also have a chance to move up later.

The graphics are probably the best there has ever been in car racing on SPECTRUM. Since GRAN TURISMO appeared in the 90s, it was probably pointless to develop racing games on the SPECTRUM,

ZOSYA proves the opposite. The controls are simple and precise, the gameplay fast and the graphics detailed. The story and cutscenes round it all off and make the game the top game of 2021 for me (although I'm generally not a car racing fan). ZOSYA sells its games complete with packaging and extras, but only in Russian roubles due to the current political situation. However, TAP, +3 or TR-DOS versions can still be downloaded for free:

https://www.zosya.net/product/travel-through-time-volume-1-northern-lights/

A small all-clear at the end: Ellvis has contacted me again, but had not sent me any game tests by the editorial deadline. So I've picked out the best games from late 2020-2021 on the fly. It's quite possible that Ellvis will add something here, after which we would be in 2022 and thus relatively up-to-date...hurrah.

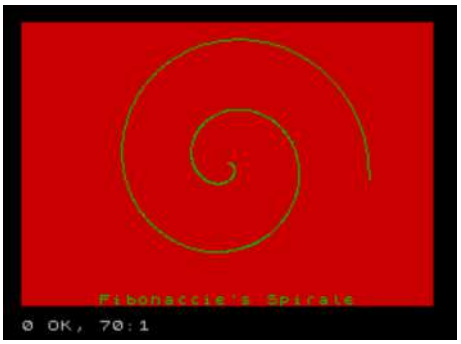


BASIC GIMMICKS

As so often, one page is missing to make the magazine full. This time I have taken a page from the Italian magazine RETROMAGAZINE, whose English-language issues 11 to 14 contain contributions by various authors and programmers entitled "BASIC FRACTALS IN 8-BIT SAUCE" fractal graphics for a wide variety of 8-bit computers. Among them are also some for the ZX SPECTRUM. I have slightly modified some of the programmes, but essentially they are identical. So: have fun trying them out - preferably with the BASINC emulator.

Joachim

FIBONACCIS SPIRAL

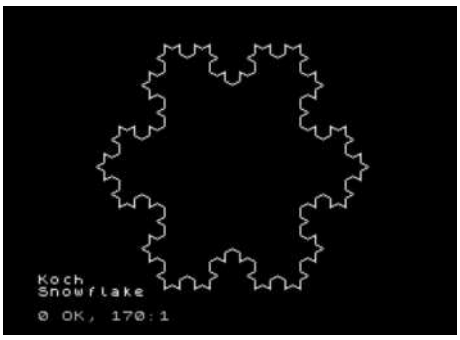



```
10 REM Fibonaccis spiral
20 BORDER 0: PAPER 2: INK 4: CLS
30 PLOT 216,78
40 FOR r=88 TO 0 STEP -.1
50 LET u=r*.144
60 DRAW 128+r*COS u-PEEK 23677,
   88-r*SIN u-PEEK 23678
70 NEXT r
```

LORENZ ATTRAKTOR

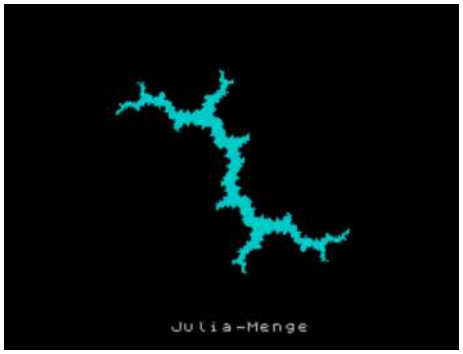
```
 10 REM Lorenz system *
 20 BORDER 0: PAPER 0: INK 6: CLS
 30 PRINT AT 21,3;"Lorenz Attraktor"
 40 LET rho=10: LET sigma=28: LET beta=8/3:
    REM Constants for this type of Lorenz
    system
 50 LET d=.002:
    REM Plotting density/distance
 60 LET x=.1: LET y=0: LET z=0:
    REM Starting values for the coordinates
 70 FOR i=1 TO 16000
 80 PLOT 127+5.7*x,87-3*y
 90 LET x=x+d*rho*(y-x):
    LET y=y+d*(x*(sigma-z)-y):
    LET z=z+d*(x*y-beta*z):
    REM Algorithm to change the coordinates
100 NEXT i
```

KOCH SNOWFLAKE




```
 10 REM Koch Snowflake
 20 BORDER 0: PAPER 0: INK 7: BRIGHT 1: CLS
 30 PRINT AT 20,0;"Koch";
    AT 21,0;"Snowflake"
 40 LET l$="F--F--F"
 50 FOR i=1 TO 3
 60 LET n$=""
 70 FOR j=1 TO LEN l$
 80 IF l$(j)="F" THEN LET n$=n$+"F+F--F+F":
    GO TO 100
 90 LET n$=n$+l$(j)
100 NEXT j
110 LET l$=n$
120 NEXT i
130 LET ang=0
140 PLOT 174,5
150 FOR i=1 TO LEN l$
160 IF l$(i)="F" THEN DRAW 6*SIN ang,
    6*COS ang
170 IF l$(i)="+" THEN LET ang=ang+PI/3
180 IF l$(i)="-" THEN LET ang=ang-PI/3
190 NEXT i
```

JULIA MENGE

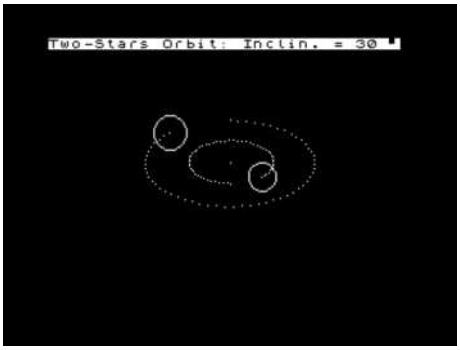



```
 10 REM Julia-Menge
 20 PAPER 0: BORDER 0: INK 5: CLS
 30 PRINT #1;TAB 11;"Julia-Menge"
 40 FOR i=-125 TO 125
 50 FOR j=-90 TO 90
 60 PLOT 127+i,85+j
 70 LET zre=i/56: LET zim=j/56
 80 LET k=0
 90 LET temp=zre*zre-zim*zim
100 LET zim=2*zre*zim+1
110 LET zre=temp: LET k=k+1
120 IF ABS zre<2 AND k<9 THEN GO TO 90
130 IF k<9 THEN PLOT INVERSE 1;127+i,85+j
140 NEXT j
150 NEXT i
160 PAUSE 0
```

And because the English texts are shorter than the German ones, the last page should also be filled, I have helped myself in the book *»Astronomy Programs for the ZX Spectrum«* presented further ahead and copied a few of the programs printed there. The programs are short and hopefully as entertaining.

Joachim

TWO-STAR-ORBIT

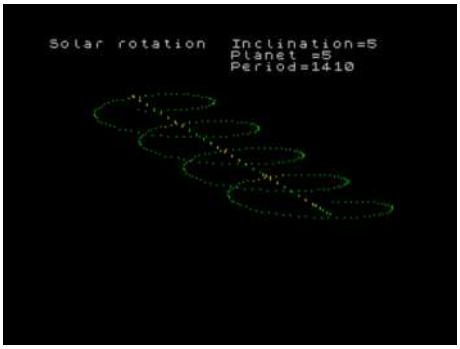



```
 10 BORDER 0: PAPER 0: INK 7: BRIGHT 1: CLS
 20 REM ********************
 30 PRINT PAPER 7; INK 0;"Two-Stars Orbit: ";
 40 REM ********************
 50 INPUT "Orbit inclin.
    (0";CHR$ 130;"to 90";CHR$ 130;")";z
 60 PRINT PAPER 7; INK 0;
   "Inclin. = ";z;" ";CHR$ 130
 70 LET z=1/SIN ((.1+z)/180*PI)
 80 INPUT "Star 1; diameter 1-20: ";d1
 90 INPUT "Star 2; diameter 1-20: ";d2
100 LET x=128: LET y=88
110 LET h=60: PLOT x,y
120 REM FOR l=1 TO 5
130 FOR f=0 TO PI*2 STEP .1
140 LET sx=INT (SIN f*h)
150 LET sx1=INT (SIN f*h/2)
160 LET cy=INT (COS f*h/z)
170 LET cy1=INT (COS f*h/z/2)
180 PLOT x+sx,y+cy
190 PLOT x-sx1,y-cy1
200 FOR n=0 TO 1: OVER 1
210 CIRCLE x-sx1,y-cy1,d1
220 CIRCLE x+sx,y+cy,d2
230 OVER 0: NEXT n: NEXT f
240 REM NEXT l
250 STOP
```

The program lines marked with REM repeat the running of the program. They are used to run the program faster in an emulator; e.g. BasinC.

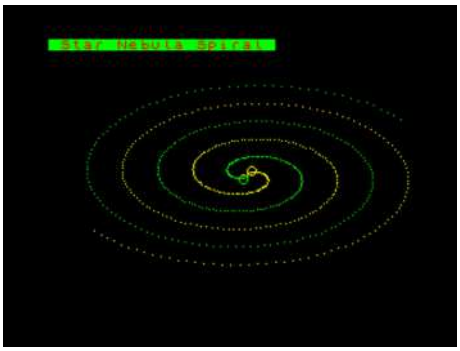
SUN ROTATION

This program shows the movement of the Sun as it passes through the Milky Way. A planet orbits around the sun and moves with it.



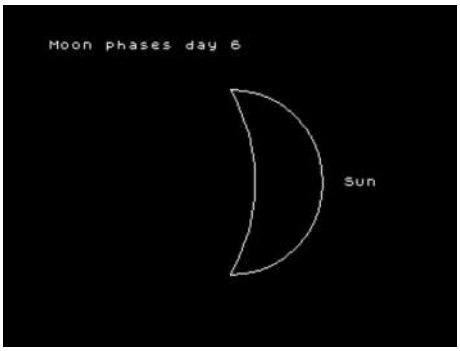

```
 10 BORDER 0: PAPER 0: INK 9: BRIGHT 1: CLS
 20 REM **********
 30 PRINT "Solar rotation",
 40 REM **********
 50 PRINT "Inclination=";
 60 INPUT "1 to 10",z: PRINT z
 70 PRINT ,"Planet =";
 80 INPUT "1 to 5",d: PRINT d',
    "Period=";: LET d=d*10: LET x=100
 90 FOR f=0 TO PI*9 STEP .1
100 PRINT AT 2,23;INT (d*f)
110 LET a=x-f*5+x: LET b=f*3+d
120 PLOT INK 6; OVER 1;a,b
130 PLOT INK 4;a+SIN f*d,b+COS f*d/z
140 NEXT f: STOP
```

STAR NEBULA SPIRAL




```
 10 BORDER 0: PAPER 0: INK : BRIGHT 1: CLS
 20 PRINT PAPER 4; INK 2;
    " Star Nebula Spiral "
 30 LET a=140: LET b=80
 40 CIRCLE a+3,b+3,3
 50 CIRCLE a-3,b-3,3
 60 FOR f=0 TO PI*5.3 STEP .05
 70 LET x=SIN f*40*f
 80 LET y=COS f*40*f
 90 PLOT INK 6;a+x/5,b+y/10
100 PLOT INK 4;a-x/5,b-y/10
110 NEXT f
```

MONDPHASEN




```
  5 BORDER 0: PAPER 0: INK 7: BRIGHT 1: CLS
 10 REM ********************
 20 REM Phases of the moon
 30 REM ********************
 40 LET x=2.5: LET r=PI/180
 50 FOR d=0 TO 28: LET p=PI
 60 CLS : IF d>14 THEN LET p=-p
 70 PRINT "Moon phases day ";d
 80 PRINT AT 12,25-(25 AND d>14);" Sun"
 90 PLOT 128,10: DRAW 0,130,p
100 LET b=d-7
110 IF b>7 THEN LET b=b-14
120 DRAW 0,-130,x*ATN (r*b*25)
130 PAUSE 50: NEXT d
140 STOP
```

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